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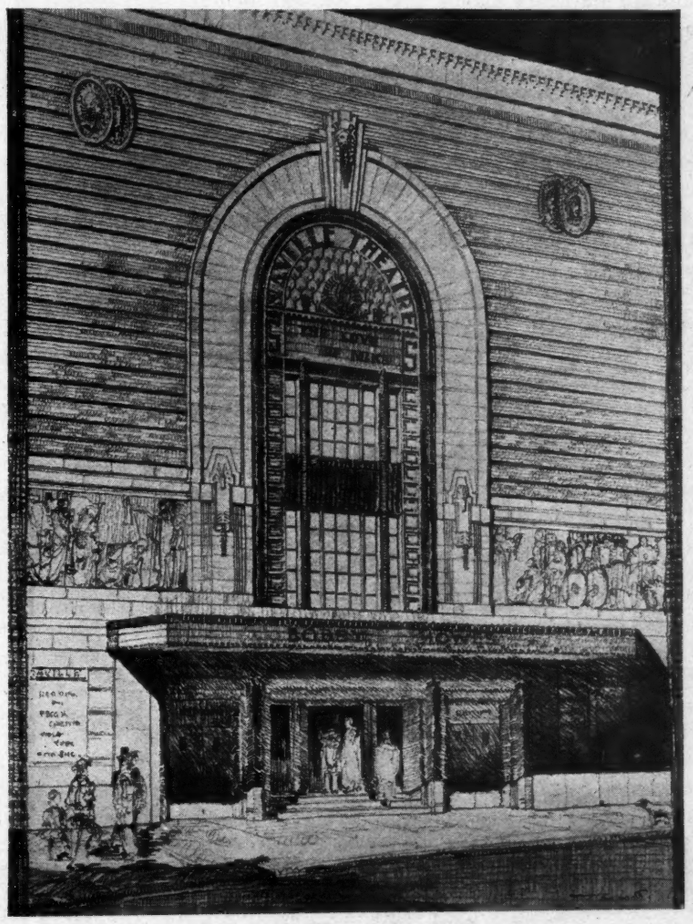


THE SAVILLE THEATRE, SHAFTESBURY AVENUE, W.

From a Drawing by MR. T. P. BENNETT, F.R.I.B.A., Architect of the Building.

MEETINGS

FRIDAY, *February* 26.

Institution of Structural Engineers (*Midland Counties Branch*). Mr. M. J. C. McCarthy on "Soil Mechanics and Concrete Pile Driving." At the James Watt Memorial Institute, Birmingham. 6.30 p.m.

Architectural Association. Mr. Eric Jarrett on "Present-Day Building in Europe: Scandinavia." 8 p.m.

Society for the Promotion of Roman Studies. Dr. Paul Jacobsthal on "The Celts in Italy." At Burlington House, W.1. 5 p.m.

Institution of Structural Engineers (*South Wales and Monmouthshire Branch*). Annual Dinner. At the Angel Hotel, Cardiff.

SATURDAY, *February* 27.

St. Paul's Ecclesiological Society. Visit to the Courtauld Institute of Art, 20, Portman-square, W.1. 2.30 p.m.

Institution of Municipal and County Engineers. Yorkshire District Meeting. At the Town Hall, Halifax. 11 a.m.

MONDAY, *March* 1.

Chartered Surveyors' Institution. Mr. Christopher Chart on "The Public Health Act, 1936." 6.30 p.m.

Royal Society of Arts. Mr. F. Ian G. Rawlins on "The Physics and Chemistry of Paintings." 8 p.m.

TUESDAY, *March* 2.

Chartered Surveyors' Institution. Annual Dinner. At Grosvenor House, W.1. 7.30 p.m.

London University. Miss E. Jeffries Davis on "Replanning of London, *c.* 1520-1930: IV." 8.15 p.m.

Chadwick Trustees. Mr. R. Fitzmaurice on "Choosing Materials and Methods of Construction for Modern Buildings." At 66, Portland-place, W.1. 6 p.m.

WEDNESDAY, *March* 3.

Timber Trade Federation of the United Kingdom. Annual Dinner. At Grosvenor House, W.1. 7.30 p.m.

Royal Society of Arts. Mr. P. de Malglaive on "French Ideas of Ship Planning and Decoration." 8.15 p.m.

Institution of Heating and Ventilating Engineers. Mr. W. W. Nobbs on "Engineering Equipment in Modern Flats." At the Institution of Mechnical Engineers, S.W.1. 7 p.m.

L.C.C. Central School of Arts and Crafts. Sir Banister Fletcher on "The Mediæval Period: Westminster Abbey." 6 p.m.

THURSDAY, *March* 4.

Auctioneers' and Estate Agents' Institute. Mr. H. F. Finn-Kelcey on "Agistment Agreements *v.* Hire Purchase." 7 p.m.

Architecture Club. Supper-Discussion on "Is there a Modern English Architecture?" At the Florence Restaurant, W.1. 7.30 p.m.

FRIDAY, *March* 5.

Royal Society of Arts. Mr. E. J. H. Mackay on "Excavations at Chanhu-daro." 4.30 p.m.

Institution of Heating and Ventilating Engineers (*Liverpool and District Branch*). Mr. H. E. P. Ashford on "Erection of some Heating and Ventilating Installations." At 312, India Building, Liverpool. 7 p.m.

THE GREAT CHURCH, DORDRECHT, HOLLAND.

FROM A DRAWING BY PROFESSOR A. E. RICHARDSON, A.R.A.

ARCHITECTURE AND PERMANENCE

THE recent debate in the House of Commons, which we discussed in a leading article last week, suggests a number of fundamental principles of which the architectural profession need not be ashamed to be reminded by laymen. Behind the anxiety to preserve ancient buildings and mature natural beauty there is something more than the mere appreciation of these things, because we know that in a distant past, obviously sensitised to beauty, there was no such feeling abroad, or at least less fear that the work of man must be an affront to nature.

When we hear an opinion such as that expressed by Mr. Hannah, deploring the ruthless tearing down of ancient buildings and their replacement by others obviously inferior, the profession of architecture does not instinctively stand to arms in defence of abilities equal to any which have gone before. This is no imagined inferiority complex, but a true instinct that, whatever may be said of individual talent, architecture has lost some indefinable quality in the pressure of rapid social progress.

Such a conclusion seems inevitable, and from such a point we are bound, if we care at all to know ourselves, to take stock of things. Are we committed by the course we are following to become æsthetically an inferior race? Has human society passed its peak of spiritual effort? Have we gone astray, and therefore must have a revolution to set things right? These are grave questions to which the only conclusive answers will be written in the history books of the future.

With regard to the first question, we must recall that our very anxiety in these difficult times marks an inherent sense of art values. They may be confused, and sometimes much distorted, but the mere fact that they concern us deeply, and that we are intensely worried about them, shows that we still have it in us to aspire, a condition which is always full of hope.

We may easily exaggerate matters. The ancients did not spend their whole lives producing masterpieces. A great part of their lives was occupied with the humdrum, everyday task. We, too, must not imagine that the whole of modern life must be highly coloured and exciting. And because the drab background is denser, we must not imagine that it is not still possible to set against it works of outstanding merit, as the high lights which make the remaining monotony more than tolerable.

As to whether we have gone astray, that, it may be so, has been the case. It is a human characteristic, and is only fatal when the divergence is so wide as to be entirely retrograde. We do not believe these days of greater concern for right living can be of this kind.

We do think, however, that we have yet failed to put the machine in its place. In the House, during a debate upon an entirely different measure, a member expressed the view that many men actually preferred their daily life to be monotonous and mechanical, so that their thoughts could be free to plan the relaxations which the whistle would release. This seems to us an appalling admission, for until labour has been related to life there can be little hope for society. The crafts represented just this relation, which made the whole of every day a source of joy to the worker, if he attained to his best. We have got to learn that the more things we can continue to make with our hands, the greater possibilities for content remain before us, and we urge upon those who can direct such matters that the craft question should be kept in the forefront of our national planning. The machine must be our servant, to do those things which are degrading, dangerous to life and limb, or inherently monotonous; and everything the machine does must be valued as something much below the works of men's hands.

We feel that a just appraisement of values is what we need most to keep in mind, and the failure to reach this is cause of much false art and indifferent architecture. Architecture is essentially an art of permanence, and not something to serve its short turn and then make room for the next. We must build in a semi-temporary way for some purposes, and we must build in that way as efficiently as possible. But we must not imagine that that is, or can be, the highest form of architecture. The greatest architecture can be approached only by the resolution to build something that will not only stand, humanly speaking, for ever, but is worthy to do so. If we keep this idea in mind, we feel that we must look to more than to the immediate present for our inspiration. Yet it is there that many modern architects have been content to look. The result is not infrequently trivial and not worthy of the great art professed.

We come then to the three viewpoints which we cannot neglect. The past, for the source of our habits and beliefs; the present, for the realities out of which dreams must grow; and the future, to which we owe such a burden of responsibility. When we have learnt our lesson we shall not fear to set the work of man down in the midst of natural beauty. There is thus a task for us all, in bringing about a general understanding of relative values. The general public can set the pace by a demand for the handicrafts. We quickly tire of the cheap, mass-produced article, and fashion encourages us to change repeatedly. The dearer and more durable product of handicraft retains its interest for a lifetime.

The educational authorities can see to it that the young people are set in the way of finding pleasure in their work by a training in hand craftsmanship and an encouragement of individual initiative. The builder must plan his business so that the craftsmen can be continually recruited with confidence in the future. The architect must attune his artistic code to the continued tradition of building craftsmanship, taking his inspiration from solid and permanent forms of construction, and merely using less permanent systems in lesser and temporary tasks. With such an orientation of view, we feel sure that the standard of modern architecture would recover the ground lost, and that faith in the profession would be restored. Then would the task of the legislator be greatly simplified, because much might be left to take its own course, leaving room for individual identity which State control tends to neglect.

The position of the architect is a privileged one in society, for he is upon a particularly advantageous observation post. From him we shall look for a lead, and from his leaders some suggestion that the importance of the whole problem is of concern to us all. We hope that political distractions and purely domestic matters will not obscure the deep obligations which the modern architect owes to the world.

NOTES

Building Finance and Architecture.

THE complicated and exacting nature of the big type of speculative building undertaking which is so much in evidence to-day was made clear by Mr. T. P. Bennett in the able and unusual paper on "Building Finance and Architecture" which he read at the R.I.B.A. on Monday evening. "It's a specialist's job," was the comment most frequently heard after the meeting (which, by the way, was a very crowded one); and certainly none but a specialist could hope to contend successfully with the interwoven intricacies of planning, design, construction, building administration and finance indicated by Mr. Bennett. The architect who would succeed in this sphere of activity must, it seems, be (among other things) not only a consummate planner, designer and constructor, but a first-rate business man, a diplomatist, an expert in economics and also, in view of the vagaries of clients, of human fallibility, and the hundred and one hazards of the social system, something of a seer as well. The ordinary private practitioner, looking perhaps a little enviously upon those of his professional brethren who, with their great staffs, handle these prodigious undertakings, will at least admit that they have to be men of uncommon ability—almost, in fact, architectural Pooh-Bahs, though, unlike the versatile figure of comic opera, in receipt of only one fee.

The Lesson of "Booms" in America.

MR. BENNETT stressed many points of importance in the course of his paper, but the two that, perhaps, remained most in mind were (1) the need for exactness in estimating the cost of a given job, and (2) the danger of over-development at boom periods. The first point needs no labouring; but we would call special attention to the lecturer's remarks on the second. He said: "No more striking or effective illustration could be found than that shown by property finance coupled with the rise in land values and the urban development in America during the boom period. The wealth of America at this time appeared to be inexhaustible, and land values rose with enormous rapidity, reaching inconceivable heights. This put a flood of speculators in the building market. Buildings in many cases excellent examples of architecture, but financially representing enormous costs, brought disaster to hundreds of thousands of investors and to thousands of speculators and developers. This false finance is a sufficient warning to us, and we might say very comforting comment on the English method . . . a system of finance which is extremely conservative in its outlook and the basic terms of its procedure."

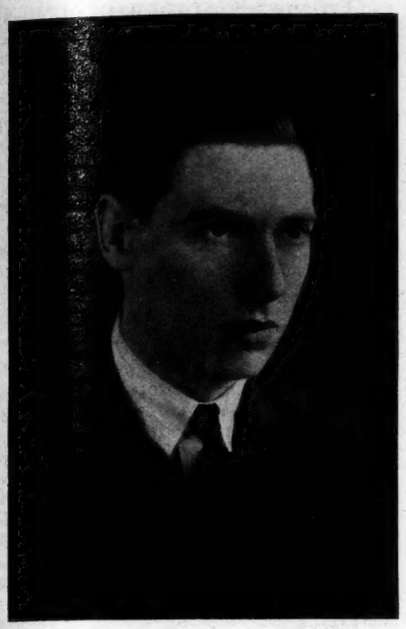
FROM A PENCIL DRAWING BY MR. A. C. FARE, A.R.I.B.A.

An Arts and Crafts Service.

ON June 12 next, at the Festival week organised by the "Friends of Canterbury Cathedral," it is proposed to hold in the Cathedral a service of the Arts and Crafts. This will be generally welcomed, though there is perhaps a good deal of misunderstanding as to what the arts stand for in the life of the nation. If, as the promoters state, it is a service of dedication in which the artist will recognise that the exercise of his art is a religious act, they will also recognise the importance of his exercising it, for which he has at the present time but little opportunity. Owing to our lop-sided views about art we, as a nation, have directed encouragement mainly to its service for industry, for the promotion of trade, neglecting the larger consideration of its relation to life as a whole. In neglecting the general welfare to concentrate on one direction only, we have neglected the fine arts of the sculptor and the painter. In so limiting our understanding of the nature of art, we forget that its finest field of expression has no necessary relation to industry at all. It is the neglect of this truth that leaves present efforts so one-sided, ignorant of the greater need which would include the lesser and restore to industry the nature and feeling which it lacks.

Fine Art and Commercial Art.

WE are not for a moment deprecating the present concern for the improvement of art in industry, or of any suitable means through which it may be furthered, but we shall not succeed in this object if we leave the fine arts out of account. For it is their influence, widely extended, which will do more to create thought and feeling again in industry than too much preoccupation on industry alone. If we are blind to the larger issues we shall not succeed by concentrating only on the lesser. So that while we recognise the good intentions of the promoters in arranging a service for the Arts and Crafts, "to make remembrance of crafts of every kind," it would be of advantage to understand what their position is in the country to-day where their recognition is so small. It has even been suggested that the arts are in danger of disappearing out of life altogether, and though this is quite unlikely, it should be realised that such a service as that proposed should not take



MR. ALWYN G. S. FIDLER, M.A., B.Arch., A.R.I.B.A.
Appointed Architect to the Land Settlement Association

place under the impression that all is well with the arts, when as a matter of fact their position is one of insecurity. Appearances are deceptive, and this service of thanksgiving might better be directed to proclaiming the importance of art as perhaps the influence most powerful to ameliorate the dangers so immediately threatening European civilisation.

The Implications of the Service.

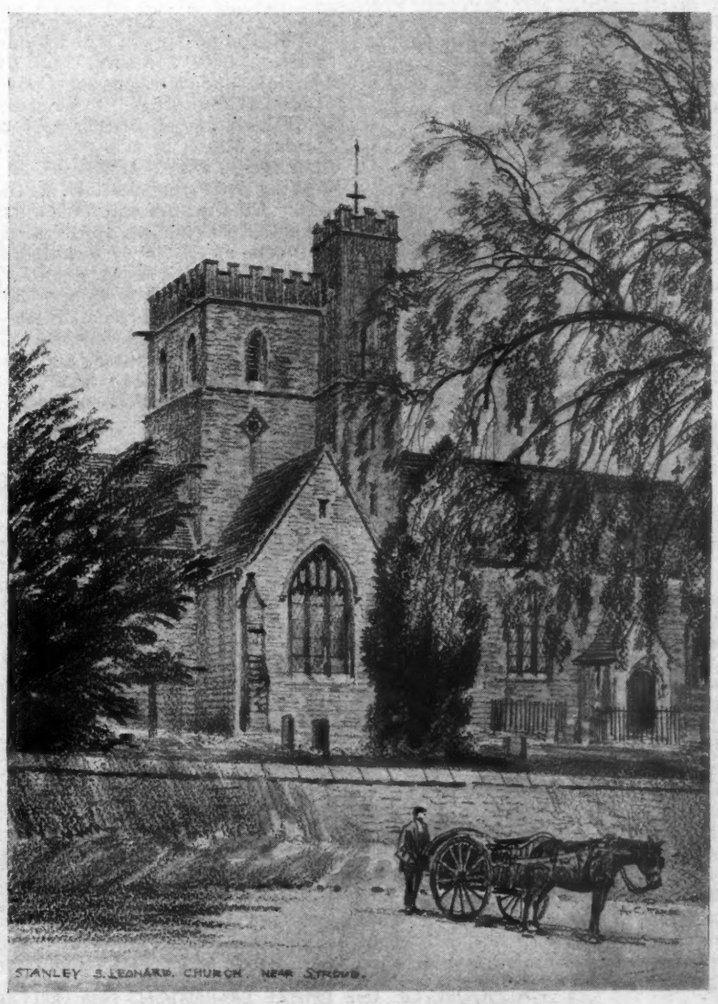
TAKING the proposal for this Service as it stands, which claims for the artist that his work is a religious act, do the promotors in laying this down mean that the source of all art is through imagination and feeling uncorrupted by worldly influence ? for this is religion. Are they agreed that though he is the child of his time he should not be its slave, and that his work cannot be done when he leans on the world and yields to circumstances ? For these vital issues cannot be disregarded if there is to be proclaimed a religious basis for art. Yet such a view will appear strange and even fantastic in a world disillusioned of itself, and, like the later periods of Hellenic thought, holding misgivings about the world, reacting towards an attitude of despair. We think, on the contrary, the affirmation made in the proposal for this service recognises the high service the arts have to offer as it is the nature of art to reveal the reality that lies behind appearance, finding beauty in truth and in truth beauty. And the restoration of the arts, so far as their influence has gone out of life, implies that we shall be constant to the truth we know. And so whether it be fine art or any other—and there is really only one art—its prospects depend not on its market-place potentialities but on love of nature, imagination and feeling.

Land Settlement Association : An Appointment.

AN interesting appointment is announced in connection with the Land Settlement Association, whose headquarters are in Westminster. Mr. Alwyn G. S. Fidler, M.A., B.Arch., A.R.I.B.A., has been appointed architect to the Association. He will be responsible for architectural developments in various parts of the country, and will be particularly concerned with the new schemes sponsored by the Commissioner for the Special Areas. Under these schemes families from the distressed areas will be settled in more prosperous districts. It is intended that the heads of the families thus transferred shall find occupation in managing gardens of approximately half an acre whilst the children obtain employment in the district. Mr. Fidler is a distinguished graduate of the Liverpool School of Architecture. At the outset of his course in the school he won the Entrance Scholarship, and later was awarded the John Lewis and Holland and Hannen and Cubitts Prizes. In 1932 he obtained the degree of Bachelor of Architecture with First Class Honours and gained the Victory Scholarship of the Royal Institute of British Architects, whilst in the following year he was awarded the Rome Scholarship in Architecture. Prior to the two years which he spent in Rome as Rome Scholar he had experience of American practice in the Philadelphia office of Messrs. Zantzinger, Borie and Medary. He has recently been working in the office of Mr. Herbert J. Rowse.

L.C.C. Green Belt Scheme.

THE London County Council is recommended by its Parks Committee to make a contribution of £50,000, instead of £45,000, as originally proposed, towards the cost of the acquisition by the Surrey County Council of Nonsuch Park, Ewell, Surrey, for preservation as an open space under the Green Belt scheme. Nonsuch Park, which has an area of about 282 acres and is situated on the main road from London to Epsom, has some historical associations. It formed the grounds of a large house which was used as a royal residence from the reign of Henry VIII, for whom it was built, until the time of Charles II, when it came into the possession of the Duchess of Cleveland, known also as Baroness Nonsuch, who had it demolished. This house had been built of the stones from Merton Abbey. The park is a place of considerable natural beauty.



FROM A PENCIL DRAWING BY MR. A. C. FARE, A.R.I.B.A.

GENERAL NEWS

Professional Announcements.

Messrs. Eric Cole and Partners, FF.R.I.B.A., of Cirencester, in conjunction with Messrs. L. W. Barnard and Partners, of Cheltenham, will be pleased to receive trades catalogues, etc., at Market-place, Faringdon (Tel. 99), where they are opening a new branch office, with Mr. F. W. Andrews in charge.

Mr. George Watson, M.Inst.C.E., M.I.Mech.E., consulting engineer, has removed his office from Buckingham-gate to 12, Stratford-place, London, W.1. Telephone: Mayfair 3154.

Messrs. John Leaning and Sons, chartered quantity surveyors, of 28, John-street, Bedford-row, W.C.1, regret to announce that Mr. Henry John Leaning, F.S.I., died at his home at Hampstead on February 17. A memoir will appear in our next issue. The practice will be continued by his surviving partners, Mr. F. C. Thompson, F.S.I., and Mr. E. W. Leaning, P.A.S.I.

Painters in Water Colours: New President.

Mr. Norman Wilkinson has been elected president of the Royal Institute of Painters in Water Colours, and Mr. W. E. Webster vice-president.

The Architecture Club.

The Architecture Club will hold a supper-discussion on Thursday, March 4, at the Florence Restaurant, W.1, when the topic will be "Is there a Modern English Architecture?" The speakers will include the following members of the Mars Group: Mr. John Gloag, Mr. Geoffrey Boumphrey, Mr. J. M. Richards, Mr. Maxwell Fry, and Mr. A. D. Connell.

The 27th dinner will be held at the Savoy Hotel on Thursday, April 29. The topic will be: "Modern Flats: A Menace or a Necessity?"

Polytechnic Surveyors' and Auctioneers' Association.

The annual dinner of this Association will be held at the Florence Restaurant, Rupert-street, W.1, on Wednesday, April 7. Tickets will be 7s. 6d. each (6s. 6d. to junior members and present students). Early application should be made to Mr. R. E. Brown, F.A.I., of Messrs. J. Ewart Gilkes and Partners, 2, Hans-road, Brompton-road, S.W.3, or Mr. H. Rona, A.A.I., of Messrs. Ethell and Partners, 14, Waterloo-place, S.W.1.

New L.C.C. Hospital in South London.

The Hospitals and Medical Services Committee of the London County Council recommend the Council to authorise them to engage an architect in private practice to plan and supervise the construction of the new hospital proposed to be erected within the curtilage of St. Benedict's Hospital, Tooting. This work would normally be entrusted to the Council's architect, but he could not undertake it at the present time without interference with the Council's existing programme of important hospital extensions and improvements. In order, therefore, that there should be no delay either in the execution of existing schemes for the provision of hospital accommodation or in the construction of the much-needed new hospital, the committee suggest the course of action mentioned above.

International Exhibition of Architecture, Cairo.

The Secretary of the R.I.B.A. has received a letter from the Royal Egyptian Embassy, London, of which the following is a copy:—

Dear Sir,—I beg to inform you that the International Exhibition of Architecture, which it was proposed to hold in Cairo in April, 1937, has been, owing to the Paris Exhibition, postponed until April, 1938, in order to allow those engaged in the Paris Exhibition to participate in the Cairo one. All applications to submit designs will be accepted until February 28, 1938. I shall be grateful if you will be kind enough to inform all interested bodies and persons accordingly.

(Signed) A. K. SAFWAT, Secretary.

Chadwick "Bossom Gift" Lectures.

Sir Raymond Unwin will preside at the "Bossom Gift" lecture, "On Choosing Materials and Methods of Construction for Modern Buildings," to be given at the Royal Institute of British Architects on Tuesday, March 2, at 6 p.m., by Mr. R. Fitzmaurice, B.Sc., A.M.Inst.C.E., of the Building Research Station at Garstang, Herts. This lecture will have a particular value that should be appreciated by all architects, as well as by technicians of the building trade. The lecture to follow it on March 16—on "The Modern Treatment of Foundations on Difficult Sites—will be by Mr. Burnard Geen. Admission is free to all Chadwick lectures, and no tickets are required. Since there are many students and practitioners of architecture and building who will be unable to attend the Bossom Course, the Chadwick Trustees have arranged for the publication of three pamphlets, each to contain two lectures of the course. The first, with the lectures of Prof. Adshead on "Modern Methods of Building" and Mr. H. A. Welch on "The Construction of the Modern House," has now been issued. Copies will be available to genuine students who attend the remaining lectures, and obtainable by all and sundry from Messrs. P. S. King and Co., Orchard House, 14, Great Smith-street, Westminster, at the price of one shilling.

COMPETITION NEWS

Municipal Buildings, Friern Barnet.

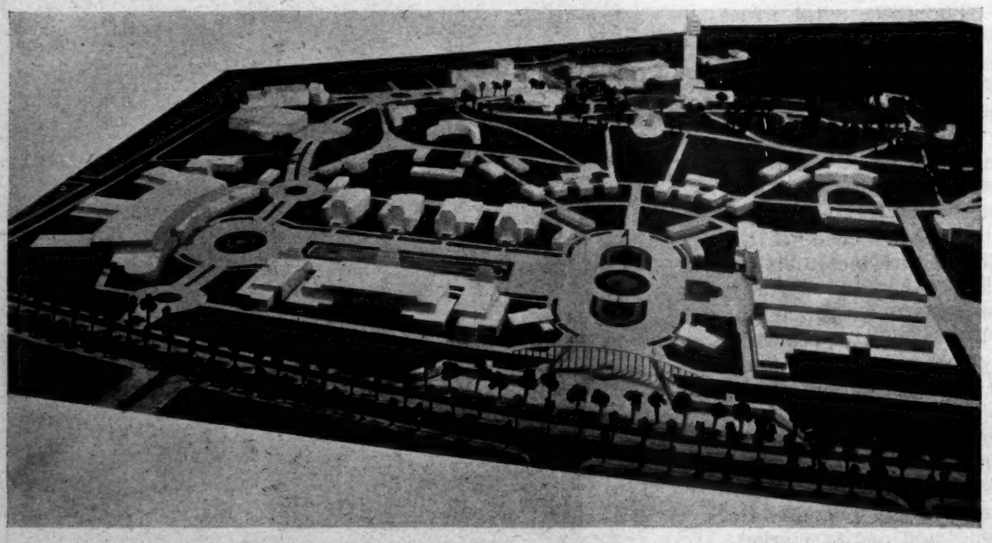
Friern Barnet U.D.C. invite architects to submit designs for proposed municipal buildings. The assessor is Mr. C. Cowles-Voysey, F.R.I.B.A., and premiums of 150 guineas, 100 guineas and 50 guineas are offered. Conditions, etc., may be obtained from Mr. G. T. Fletcher, Clerk, Council Offices, The Priory, Friern Barnet, N.11, upon deposit of £1 1s. Designs to be sent by June 21.

Architectural Competition for a Turkish Memorial.

Architects from all countries are being invited to submit designs for a memorial to Kemel Ataturk, the Turkish dictator. It is intended to spend 100,000 Turkish pounds on the memorial, and the competition will carry first and second prizes of 1,000 and 500 Turkish pounds respectively. (One pound sterling equals 6.14 Turkish pounds at par.) There are apparently few limitations as to the form which the memorial, or the designs for it, may take; competitors are expected to provide the general idea, as well as the designs themselves. The competition closes on May 31. Further particulars may be obtained on application to the Turkish Ministry of Culture at Erzerum.

A Lido, Reading.

Reading T.C. is considering the formation of a "Lido" at View Island. A report by the Parks (Bathing Facilities) Sub-Committee submitted to the Council states they had considered preparing details of a competition for designs of a complete scheme for providing View Island with a bathing pool and necessary buildings. In the event of the expenditure of £15,000 being approved, they recommended that three prizes of 100, 50 and 25 guineas be offered for designs.



A MODEL OF THE EMPIRE EXHIBITION, 1938, BELLAHOUSTON PARK, GLASGOW.

SIR JOHN BURNET, TAIT AND LORNE, Architects.

CORRESPONDENCE

The Architects' Registration Bill.

SIR,—Mr. Jackson, in his letter in your last issue, presumes to write authoritatively on behalf of the Registration Council, the "Unattached" architects, the Board of Architectural Education, and even on my behalf, where he says "I will state his (Major Athoe's) sole reason for opposition." He then goes on to talk about an obsolete examination and happenings on the Registration Council which took place long before he became a member of it.

But neither Mr. Jackson nor his newly found friends on the Registration Council attempt to deny that that Council passed unanimously the resolution which I quoted in my previous letter, and which has not been rescinded, nor does he deny my assertion that the Amending Act Committee set up as a result of that resolution has not anything like completed its job.

Now, I believe that the real backers of the Bill are the R.I.B.A., but confusion is worse confounded by an R.I.B.A. official statement in the current issue of the *R.I.B.A. Journal*, wherein it is stated:—

> "Without the protection of the Bill those architects who have had a full professional education and those who are properly established in genuine architectural practice will continue to be subject to competition from rivals who are architects only in name, who submit to no code of conduct, are not amenable to discipline, and whose constant endeavour, conscious or unconscious, must be to lower the standards of the profession to their level."

I have ventured to suggest that very few architects know anything about the principal Act, and the majority of them are mystified as to what the Amending Bill means. It now appears from their own statement quoted above that the R.I.B.A. do not understand their own Bill. To enlighten them I demonstrate later by examples that no such protection as the R.I.B.A. envisages is afforded by the new Bill or the principal Act.

The R.I.B.A. have put up a preliminary payment or guarantee of £250 to a fund for promoting the Bill. Does this benevolent body realise what it is doing? Once upon a time it asked us to believe that the be-all, if not the end-all, of an architect was to be a "chartered architect" at a cost of from three to four guineas per annum. Now they say we are all to be compelled to become "registered architects" at 6s. 8d. per annum. If, therefore, the "hall mark" of an architect is to be changed and the control of the "hall mark" vested in a Registration Council and not in the Institute, it will not be many years before the latter must become superfluous. But let us imagine that the Bill becomes law and let us visualise what could happen then:—

A is a house and estate agent 21 years of age. He claims that he was an architect at the passing of the Act, inasmuch as a few months before that event he designed one or two bungalows. He is passed as a Registered Architect.

B is a builder, but before the passing of the Act he claims to have designed one or more houses which he built. Claim refused. His solicitors threaten to bring an action against the Registration Council, whereupon he is admitted to the Register.

C is an architectural assistant to his father, a registered architect enjoying a fairly good practice. Applicant turned down because he has not had 10 years in the study and practice of architecture. Father threatens, through his solicitor, that the Act makes no such requisition and to —— with the Council's regulation. Application on this "appeal" allowed.

D—an applicant who, after three or four years' articles, remains with a firm of architects and eventually becomes their chief assistant. Has eight years' experience and submits plans, his own work, which are very good. Application refused because the applicant does not comply with the Council's 10-year qualification.

E—an architect registered in South Africa, aged 40 years, returns to his homeland after the statutory two years. Is unable to use the title "architect" unless he passes the R.I.B.A. Final Examination or goes back to school and passes one of the "recognised" school examinations.

F—another estate agent—is an "also ran," and is refused admission to the Register.

And now for another peep into the future, after a few years have passed:—

A, thriving as a registered architect, takes the back page of *The Times*, and, intermingled with announcements of "desirable residences" to be let or sold, introduces a "box" announcing that he is prepared to design and supervise the erection of buildings of any kind at 3 per cent.

B, encouraged by A's advertisement, advertises that he is prepared to build houses at competitive prices without any charge for plans; in fact, in his letter he indicates that it is a waste of money to pay architects' and quantity surveyors' fees.

C finds competition so brisk that he emulates the example of A by advertising his services.

D is "fed up" but, needing subsistence, throws in his lot with A, B and C in turn.

E follows suit.

F, in the meantime, looks round and finds that G—an architectural assistant and a registered architect, wants a job—so he engages him; thereupon F advertises himself as "F and Co., Registered Architects," and emulates A with marked success.

RESULT: Uproar at Portland-place. Professional Purposes Committee of the A.R.C.U.K. (which, incidentally, has no *locus standi*) writes to culprits for an explanation, adding that they, the culprits, have disobeyed the code. Culprits reply, "We are not guilty of disgraceful conduct, you cannot enforce a code which is not in the Act, and that's that . . . . get on with it." Solicitors of A.R.C.U.K. advise there are no good grounds for removing the culprits from the Register. Portland-place fume, but by this time subscriptions have dwindled, which compels P.P. to fade away, leaving an ancient and honourable profession in the hands of sordid and competitive commercialism.

All these things are possible. If your readers think that my story is beyond belief, let them invest the sum of 4d. at the Stationery Office, read the Architects (Registration) Act of 1931, and particularly Clauses 2, 7 and 17. There is no definition in the Act of what is meant by "architect" or "disgraceful conduct," and I suggest that no judge of the High Court would hold that (a) to accept fees lower than the Scale Fees, or (b) to tout for clients, or (c) to trade as a builder or house-agent, or (d) to use the title "registered architect" when the respondent is not in fact a registered person, but employs a registered person, could be interpreted as a misdemeanour within the meaning of the Act.

Now, Messrs. Jackson and Tatchell, can you invite a bona-fide architect to write to his M.P. to support such a Bill as this?

G. B. J. ATHOE,
Incorporated Association of
Architects and Surveyors.
43, Grosvenor-place, London, S.W.1.

The British Industries Fair.

SIR,—On Friday, February 26, the British Industries Fair of 1937 will close. In twenty-two years it has grown in size and quality; the latest Fair has been the largest and, by all accounts, the best. In congratulating the Department of Overseas Trade and the Birmingham Chamber of Commerce on their organisation in London and Birmingham, you will perhaps allow me to emphasise the importance of the Fair in showing our goods to oversea buyers from no fewer than 75 countries, and in helping our exporters.

It is relatively easy now to sell goods in our home market, and the armament programme will make it easier, but the very buoyancy of the home market makes it more difficult for us to sell abroad. To pay our way and to maintain our living standards we must sell abroad. In the last few years we have recovered some of our export trade—between 1932 and 1936 the declared value of our domestic exports rose by nearly £76,000,000, or 20 per cent., but even so, in volume our domestic exports of 1936 are 17 per cent. below those of 1930, and the declared value of our exports in 1936 was only 60 per cent. of the declared value of our exports in 1929.

If our foreign visitors carry home with them not only a generous consignment of British goods but a conviction that they must buy from us if we are to maintain our impressive purchases from them, then indeed the organisers of the British Industries Fair, 1937, will be carried forward to the Fair of 1938 in the happy confidence of success.

[SIR] ALAN ANDERSON.
5, Fenchurch-avenue, E.C.3.

Greater London Housing Campaign.

In the course of a letter referring to the article on this subject, by Mr. James P. Orr, in our issue for February 12, Mr. F. G. Pratt, of Westminster Housing Association, calls attention to the statement that "The appointed day at which overcrowding became an offence was, in London, the 1st of January, 1937."

"The 1st of January, 1937," our correspondent proceeds, "has been made the appointed day for only six London boroughs, where there is comparatively little overcrowding. The 1st of July, 1937, has been made the appointed day for nine other boroughs, but in the remaining boroughs, where the overcrowding is worst, no date has yet been fixed. In these twenty-two boroughs there will be no obligation to report overcrowding as it arises, and there will be no check on the process of 're-overcrowding,' and large numbers of new lettings and new admissions into overcrowded tenements will be likely to make the data of the 1935 survey progressively out of date." [The statement concerning the "appointed day" was an editorial interpolation, and we are obliged to our correspondent for the fuller details which he gives.—ED.]

BUILDING FINANCE AND ARCHITECTURE

A paper on this subject was read by Mr. T. P. Bennett, F.R.I.B.A., at a meeting of the R.I.B.A. on Monday, February 22. The chair was occupied by the President, Mr. Percy Thomas.

Planning for Cost and Construction.

In the course of his paper the lecturer said the grasp of the problem of finance centred first around planning. A real grasp of building would dictate the shape of the plan, economy of approaches, a clear grasp of essential services, a knowledge of the precise purpose of the building, and familiarity with the exact dimensions of units and their interrelation. Besides planning for economic usage, the architect must plan for economic construction. To deal adequately with the money at his disposal he must have a clear knowledge of the requirements of brick construction and weight-carrying capacity, the advantages of steel framing and reinforced concrete, the spacing of units and the use of economic spans. This knowledge must be so thoroughly absorbed that it did not affect the play of the architect's imagination in arranging the shapes and sizes of the building. A complete architectural mind would similarly know the cost, the effect, the advantage of each grade of construction and type of material so that he could reduce, extend or eliminate with complete appreciation of the loss of solidity or loss of humanity which each expenditure or economy involved.

The power to design must embrace an ability to use only costly forms or massing where the conditions of the problem justified disregard for cost. Wasteful thickness of materials was a constant source of expenditure. In design involving mechanical support like steel and reinforced concrete, changes of plane involved constant expenditure. To-day hand-made work was a luxury, yet it still had an atmosphere and appeal which were absent in the product of the machine. In some cases skill and not money might be paramount. The materials of the elevation both internally and externally must be clearly valued in the mind. The true architect would know almost the precise variation in general cost which would be involved by a conception of stone, brick, iron, lead, bronze or glass.

Preparation of Estimates.

An accurate estimate of cost was of paramount importance to the financial mind. In very many cases it represented the difference between comfort or bankruptcy for a number of individuals. Financially, accurate estimates produced confidence in building. In many cases it might be desirable to give alternative estimates for different materials of construction, different methods of finish, and various types of equipment.

The architectural profession as a whole was accused of being financially immoral, since its estimate of the cost of the buildings was constantly wrong and in certain cases was flagrantly wrong. It was argued by the financial mind that either the architect knew his job and failed to give an accurate idea of the expenditure he was certain to incur, or he was incompetent and did not know the cost of the works he controlled or professed to control. In either case there was a serious loss to the prestige of the profession.

Alternatives and Cost.

It was well known that increased cost of building arose from unknown quantities such as foundation difficulties, demands of the vast army of authorities who had control of portions of the building, the disclosure of requirements of clients at much too late a date, or constant alterations during progress of construction. What was a luxury to-day was often a necessity to-morrow, and as a building could not afford to be out of date, many large schemes must of necessity be adjusted during progress. Foresight by the architect could not always avoid this contingency. Many financial reports on buildings, however, disclosed increases in expenditure which were not the result of any of these obvious or perhaps unknown sources of expenditure. Similarly, there was all too great reluctance on the part of the architect to acquaint the owner with the expenditure which he was daily incurring.

In the early stages of the scheme estimates must, of necessity, be based upon somewhat vague and uncertain foundations. Rough and ready methods like cubing were almost the only means of arriving at a figure. Cubes were affected by size and shape, by the number of stories in the building, by foundations, methods of construction, standard of finish, type of equipment, or speed of erection, and none of these items affected the bulk which was the basis of the cube.

The estimate, once prepared, was subject to many vicissitudes, not the least of which was the length of time taken in extensive building operations. Large building schemes taking a year or more to design, one, three, five or more years to build, necessarily involved a period during which the prices of materials and rates of labour changed. The architect must endeavour to forestall such changes, or at least advise his client that they were taking place.

These estimates for large buildings also needed to take account of incidental financial loss, such as loss of interest, change of bank rate, loss during period of building, waste on personnel, fuel, light and other essentials before the building was fully occupied and revenue producing. The estimate should also differentiate between expenditure which was deliberately incurred to decrease maintenance or produce "lettability" without necessarily increasing the yield per cent. on the money invested.

Many building owners were loth to admit to themselves the cost of contemplated works and, when presented with true estimates, frequently endeavoured arbitrarily to reduce these figures, although there might ultimately be no hope of actually achieving the reduction. The honest architect had lost jobs through this honesty, but rarely more than once.

Working Within the Estimate.

Production of the accurate estimate was only the beginning of the financial success of a building. All the developments of sketch plans and working drawings, placing of contracts and subcontracts, the fresh ideas of tenants, directors and building owners varied the cost of buildings, and in almost every case caused an increase.

Having passed the stage of the original estimate, the accuracy and completeness of the working drawings went far towards stabilising the cost at the level of the builder's tender, but he feared many of the drawings issued by architects were far from ideal in that respect. In many cases the construction was not accurately plotted on the plans, beams and stanchions were not accurately "married up" to the site dimensions, and the plans were not plotted accurately to the survey. The standing of the individual architect and, indeed, of the whole profession, was governed to a very large extent by the sound workmanship which went into these working drawings.

Similarly, the architectural profession's co-partner, the quantity surveyor, must produce accurate and extensive quantities. The desire for speed from quantity surveyors sometimes produced a long list of lump sums and provisional amounts to cover services which ought to be measured. These lump sums were a cause of worry and anxiety, because such items must be remeasured and repriced before the actual cost were known.

Proper Competition for Sub-Contracts.

Competition amongst contractors in respect of sub-contracts had to-day become a very large part of the responsibility of the architect. These same subcontractors, in order to secure the contract for themselves, tended more and more to establish drawing offices for the production of drawings which, strictly speaking, were the province of the architect. This was a kind of saving of cost on the part of the architect which reacted seriously upon his standing with his client. Sooner or later clients realised, as they must, that the architect did not produce many of the drawings for which he was paid and that he had all too hazy a knowledge of ventilation, electricity, type of fuel used or of the practical application of colour and internal decoration.

It was certain that the firms who spent their money producing these drawings must charge the building owner for their work, but the practice tended to eliminate real competition, and prices were then charged which were far in excess of the real value of the work put into the building. It was often amazingly difficult to stop clients from spending money, but whatever conceit a director or manager might possess he would not ultimately condemn the man who judiciously reminded him that this or that was adding to the cost of his building, and some type of periodical return of cost should be essential on every type of building.

Check on Variations.

Every variation should be covered by a variation order. Every contractor should every few weeks report extras which he considered he had incurred or which had been the source of indirect instructions from the client or architect. Failure to disclose these costs often led

the building owner to indulge in luxuries which he would otherwise avoid, and so the final cost of the building was far greater than the conditions of the problem merited or justified.

The architect whose work lay principally in the field of building development, whether it was in connection with the building of houses, offices, shops, theatres, cinemas, or similar buildings, eventually must acquire a knowledge of the demands of the type of buildings with which he was interested. Ofter this knowledge greatly exceeded that of his clients. He must become familiar with the earning capacity of various localities, type of development and suitability of buildings for the particular neighbourhood.

This knowledge was, indeed, often only possible to the person having the sensitiveness of an artistic brain. It necessitated clear visualisation of the social conditions surrounding different classes of the population. It involved foresight which could accurately see the trend of social conditions. It required an imagination which could select from the experiments of a particular period those which would pass into the general use of the community and those which would ultimately fail.

Side by side with this power to visualise and to plan for suitable development must come the power to relate the building to the site, not only practically but from the point of view of earning capacity, and it was not a very far journey from this point to a knowledge of land values and a knowledge of rack rents which was sufficient to indicate the relationship between cost of development and the cost of land.

Importance of Accurate Practical Decision.

Financially, this decision was one of the principal factors which dictated the success or failure of a particular investment. The person who must make a decision or, at any rate, offer advice the basis for a decision, in almost every case was the architect, and he must indicate or adopt: (a) Correct standard of construction. (b)Grade of amenities suitable for the predetermined rent. (c) Hold an accurate balance between the cost of building and the cost of upkeep. (d) Determine the extent to which his clients were justified in artificially enriching the land adjacent to the building. All these decisions involved: (1) An accurate knowledge of land cost. (2) An accurate knowledge of building cost. (3) The rents obtainable. (4) Accommodation required to command these rents. (5) Standard of building required to demand these rents. (6) Cost of upkeep compared with cost of construction. (7) Reasonable rate of interest on the capital involved.

Finding Money.

It was easy to pay for a building by taking from a bank a suitable amount of currency and paying this sum of money to a builder, and thus completing a financial transaction. This was the simplest of all methods of financing buildings. The only cost which was incurred on account of finance was loss of interest. This loss of interest might (a) Be written off as interest which the owner never expected to receive. (b) It might involve loss of bank deposit interest, to-day at ½ per cent. (c) It might involve the loss of interest due to the sale of securities earning from 3 per cent. to 6 per cent.

In a great number of projects finance on these simple lines was not possible because the full value of the building project was not available, and some other method of finance was, therefore, necessary. The next method divided the transaction into two distinct portions: the first involved the provision of cash which represented the first risk on the property —the first loss in case of failure. This money represented the amount of safeguard to any other money which might be put into a venture, since when it was discounted the building might be so far below the value of surrounding and competing buildings that it was therefore certain of a profitable market. When cash to this extent had been invested in a building it was possible to obtain the balance of the money required in the form of a mortgage.

On first mortgage a conservative advance was limited to a loan of approximately two-thirds of the total cost of the building, thus providing a probable safe margin. The American boom in the post-war period undermined its whole financial security by allowing these mortgages, first or otherwise, to rise to the level of 70 per cent., 80 per cent., 90 per cent., 95 per cent. or even 100 per cent. of the total cost. Eventually the result was disastrous.

Bank Finance.

The cheapest type of finance of this character was usually bank finance—that was, an advance on "overdraft," i.e., a loan given by the bank to a strong borrower, person or company whom the bank considered sound, of high integrity and capable of repaying the loan at any time suitable to the bank.

Bank finance had certain distinguishing characteristics: (a) It was also invariably temporary—i.e., it must be repaid at some fixed period after completion of the building and could not normally remain a permanent loan. (b) It was generally an advance on personal covenant. (c) It was able to be called up at any moment. Thus, bank finance was only possible to the best class of borrower, and its cost to-day was between 4 per cent. and 5 per cent. per annum on the amount involved.

The lecturer then proceeded to deal with other methods of finances.

Fees and Costs which Add to the Capital.

In all financial schemes, he proceeded, there must be fees and expenses which were outside the cost of the project, but which often constituted substantial sums—i.e., fees to (a) land agent; (b) architect; (c) quantity surveyor; (d) accountants; (e) procuration and finance; (f) management; (g) purchase of interests, e.g., sitting tenants, etc.; (h) temporary housing; (i) temporary works for carrying on trade; (j) payment of unemployed staff. Money idle during building absorbed more money as "loss of interest." Buildings not fully in production suffered temporary loss of trade which involved waste of overheads. Partial occupation frequently incurred the cost of full services. Any sound scheme must allow for such costs and for wastage over which no one had control (a) rises in cost of materials; (b) rises in rates of wages; (c) new legislation; (d) new inventions which it might be desirable to incorporate.

Finance and Architecture.

Huge expenditure for building was available by means of loan in the form of votes of supply from the Government, overdrafts in the name of a private individual, or investment of existing capital, and side by side with these solid sources of money was the margin put up with the largest risk, that was, money which would first be lost if the project failed.

Financially, therefore, the architect came into contact with expenditure in three different forms: (1) The way in which the cost of his building was to be found. (2) The way in which the expenditure was to be controlled. (3) The precise manner in which the money was to be spent.

This was the order in which finance controlled a building, but as the great majority of projects were financed apart from the architect, the profession as a whole saw the order reversed and the architect was asked: (1) To prepare accurate estimates. (2) To control expenditure. (3) To spend money wisely and well. Financially, these three items were a measure of the view of the financial world of sound architecture.

There were a great many ways in which bad finance might adversely affect the building. A number of these had been included in the foregoing notes. The outstanding items were under-estimating, unsuitable expenditure, excessive expenditure on the one hand and, on the other, finance which was insufficient for the initial cost of the project or which provided insufficient trading margin, which did not allow the project to mature until it was self-supporting.

"While this insufficient or unsound finance is bad in individual cases," concluded the lecturer, "it becomes extremely serious when it is generally applied. No more striking or effective illustration could be found than that shown by property finance coupled with the rise in land values and the urban development in America during the boom period. The wealth of America at this time appeared to be inexhaustible and land values rose with enormous rapidity, reaching inconceivable heights. This put a flood of speculators in the building market. Buildings in many cases excellent examples of architecture, but financially representing enormous costs, brought disaster to hundreds of thousands of investors and to thousands of speculators and developers.

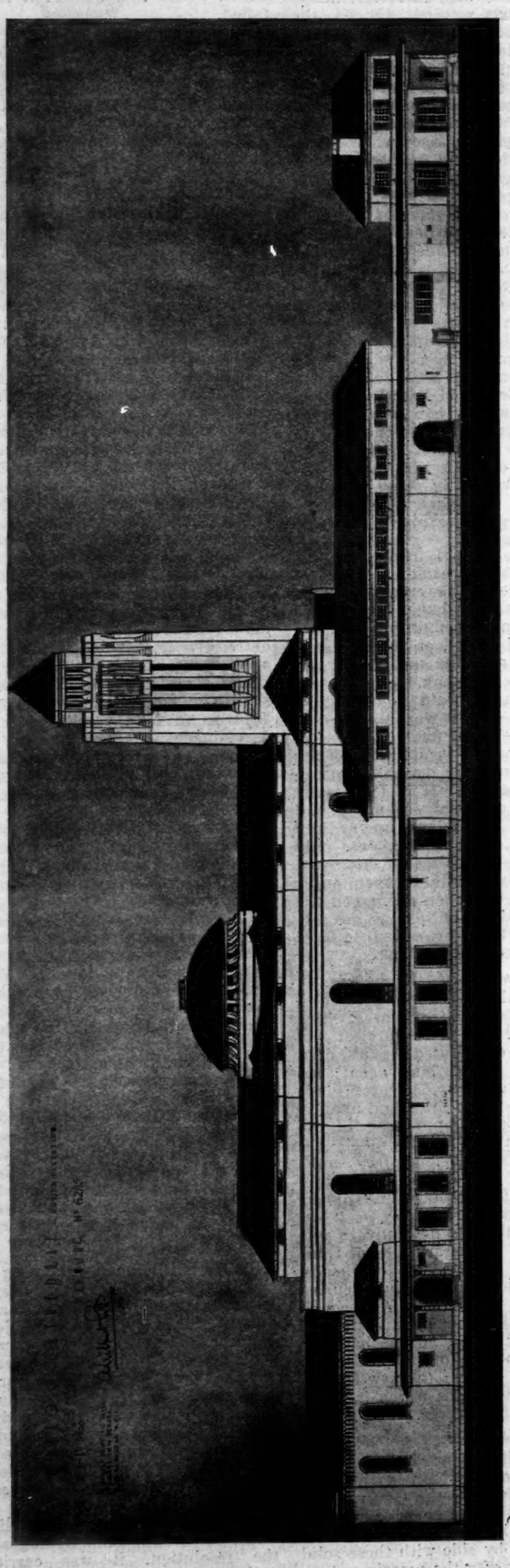
"This false finance is a sufficient warning to us, and we might almost say very comforting comment on the English method, which always has had, and which still persists on the whole in, a system of finance which is extremely conservative in its outlook and the basic terms of its procedure. The same level-headedness which gives the English financier a sane and sound outlook gives English buildings a similar aspect, and although it may prevent them from having the exciting aspect and sumptuous appearance of many buildings erected by other countries it safeguards them from major disasters."

Vote of Thanks.

Sir Harold Bellman, proposing a vote of thanks to Mr. Bennett, described the paper as a comprehensive and admirable survey of a very difficult subject. The lecturer had taught him a more wholesome respect for the architectural profession. There was a case for greater co-operation between finance, on the one hand, and the architect on the other.

Sir Samuel Instone, seconding the motion, said the paper was an education, and he hoped it would be widely circulated. Many people did not realise the efforts made by the architect to keep down the expenditure of his clients.

Mr. J. M. Theobald having supported the resolution, it was carried with acclamation.



CAIRO CATHEDRAL : North Elevation.
MR. A. GILBERT SCOTT, F.R.I.B.A., Architect.
(See page 477.)

ARCHITECTS' REGISTRATION

"UNATTACHED" REPRESENTATIVES ASSOCIATION.

Result of Election of Representatives.

We have received the following statement for publication :—

The result of the recent election of representatives of the "unattached" registered architects to serve on the Registration Council has now been notified to the successful candidates, who are the following :—

H. Baily, D. W. Beck, E. W. Chapman, E. J. Elford, L. G. Head, W. O. Hudson, and G. W. Jackson.

All those elected, with the single exception of Mr. E. J. Elford, were the candidates recommended by the Representatives Association, and the result indicates that the recently declared policy of the Association, and particularly their support of the Amending Bill, is approved by the "unattached" registered architects.

Mr. Elford is an "unattached" architect and a member of the Institute of Municipal and County Engineers. He was one of four candidates put forward by the Institute with very strong support, and his assistance as a member of the Association will be welcomed by the Representatives Association because it will enable the views of the "unattached" registered architects connected with municipalities to be considered by all the "unattached" representatives.

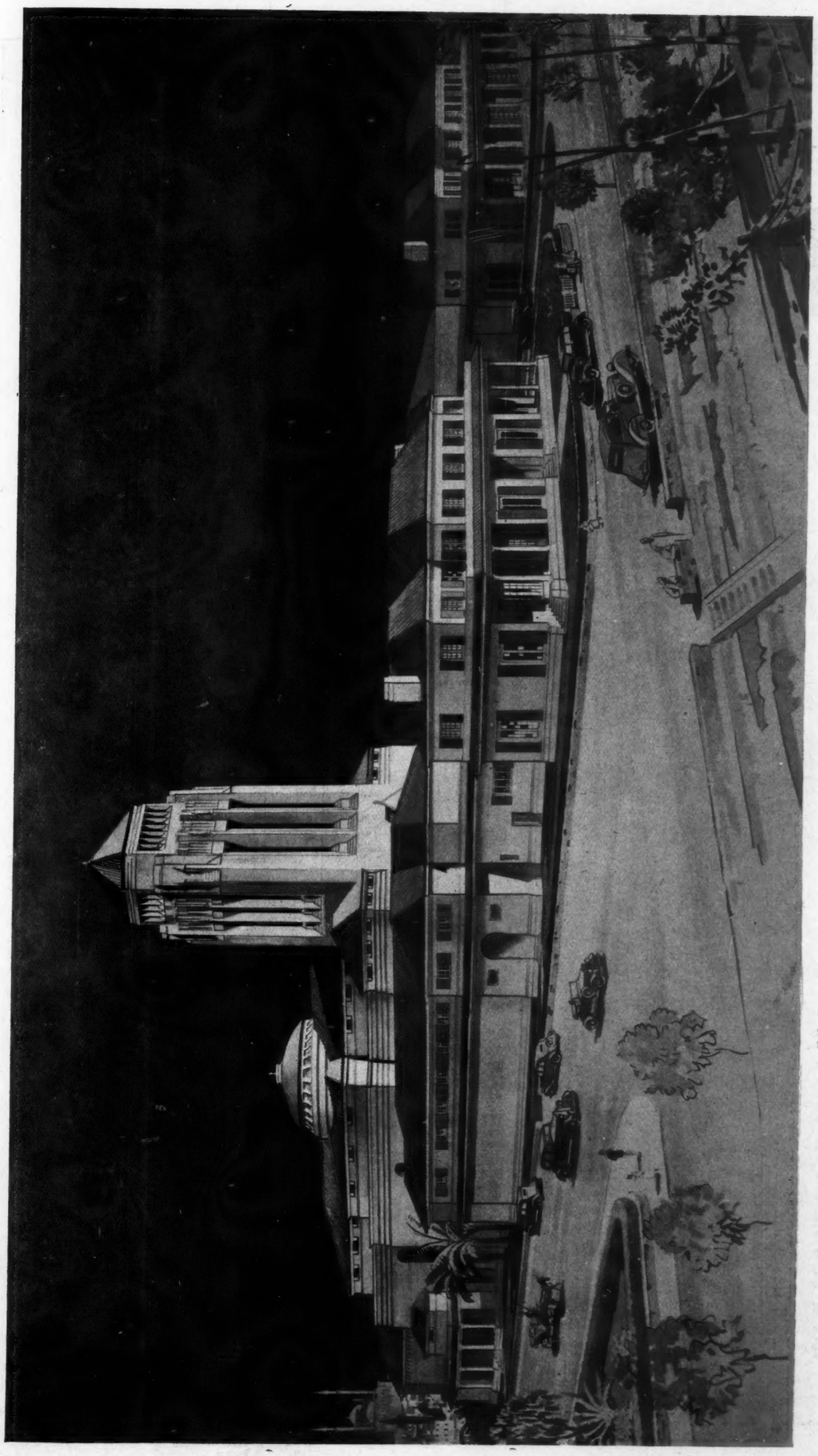
Mr. Chapman returns to the Registration Council after an absence of one year. He is engaged at H.M. Office of Works, and his views as an "unattached" architect and a representative of the Civil Service should be of great value to the Association.

Mr. Arthur Newnham headed the list of those not elected, but his services in the interests of the "unattached" will not be lost, as he is to continue in his position of hon. secretary to the Association.

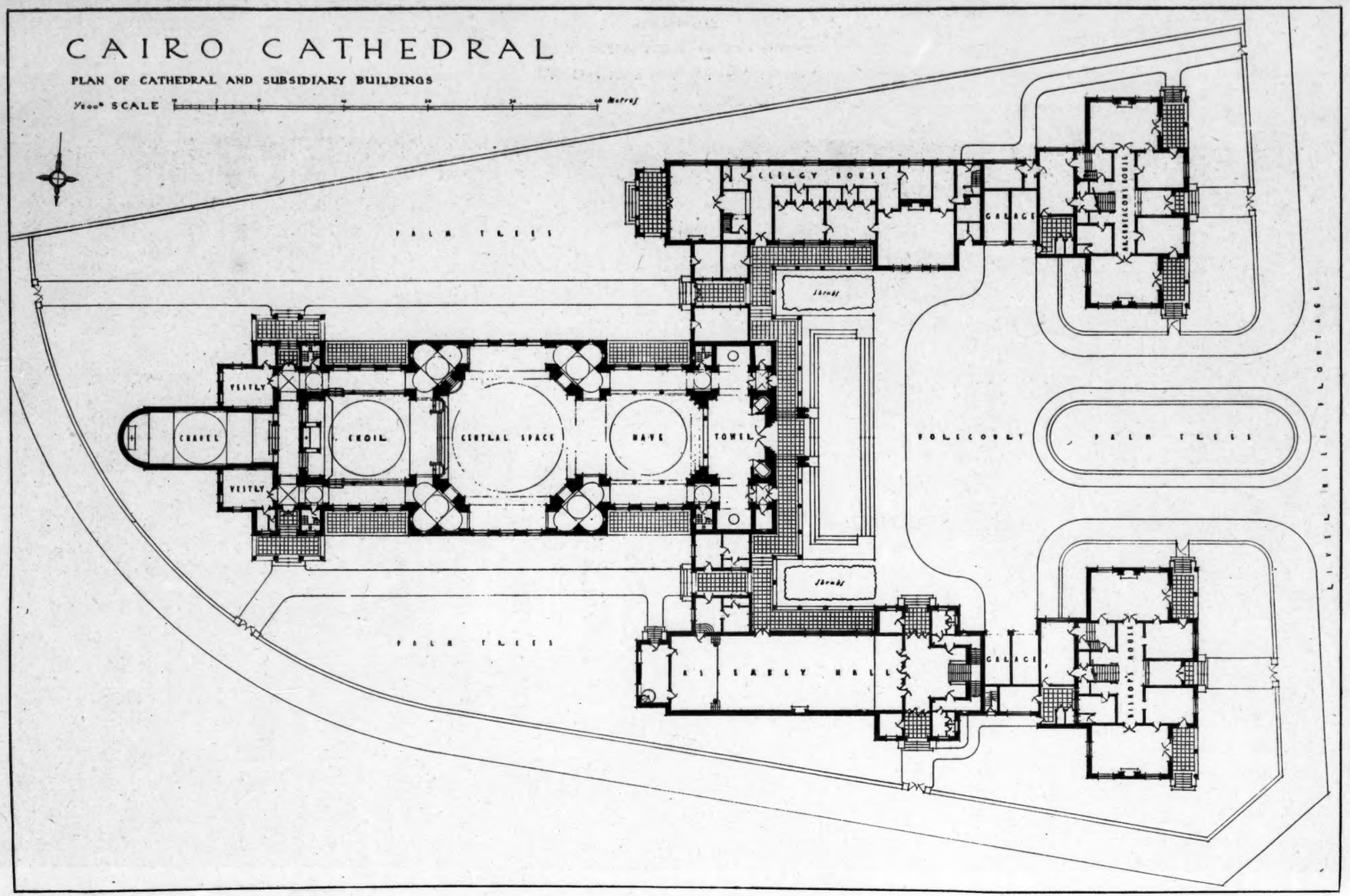
The members of the Representatives Association desire to express their thanks to all "unattached" registered architects for their expression of confidence and for the keen interest they have taken in the election.

ENGLISH MEDIÆVAL CHURCH ORNAMENT

Sir Banister Fletcher, M.Arch., P-P.R.I.B.A., F.S.A., on Wednesday, February 17, at the Central School of Arts and Crafts, gave a lecture on the roof drainage, ornament and fittings of mediæval churches in England. One of the features frequently met with, said the lecturer, was wall arcading, which was a very good index to the date of a building, and he proceeded to explain the characteristics of each period, from the simple early treatment to the elaborate all-over treatment of the Tudor period. He next described the carved ornament and illustrated his remarks with some excellent views. Figure sculptures, he said, set forth the Bible story and proclaimed the lives of saints, the heroism of knights, and the valour of kings, and embodied the best craftsmanship of the age, symbolising often the virtues and vices. He pointed out how the mediæval craftsman devoted his skill to the carving of numerous church fittings. The chancel screen, frequently of intricate delicacy, was eloquent of the sacredness of the sanctuary beyond; while the rood, lifted high on the rood-loft above, proclaimed the sacrifice of the Saviour of the world. The richness of ornament concentrated on the reredos was a background for the holy sacrament of the Church, and it was flanked on either side by the delicate tabernacled work of the sedilia, piscina, and choir stalls. The change of style in these fittings from the early Norman to the late Perpendicular was shown by a large number of lantern views, which presented vividly the character of the ornament.



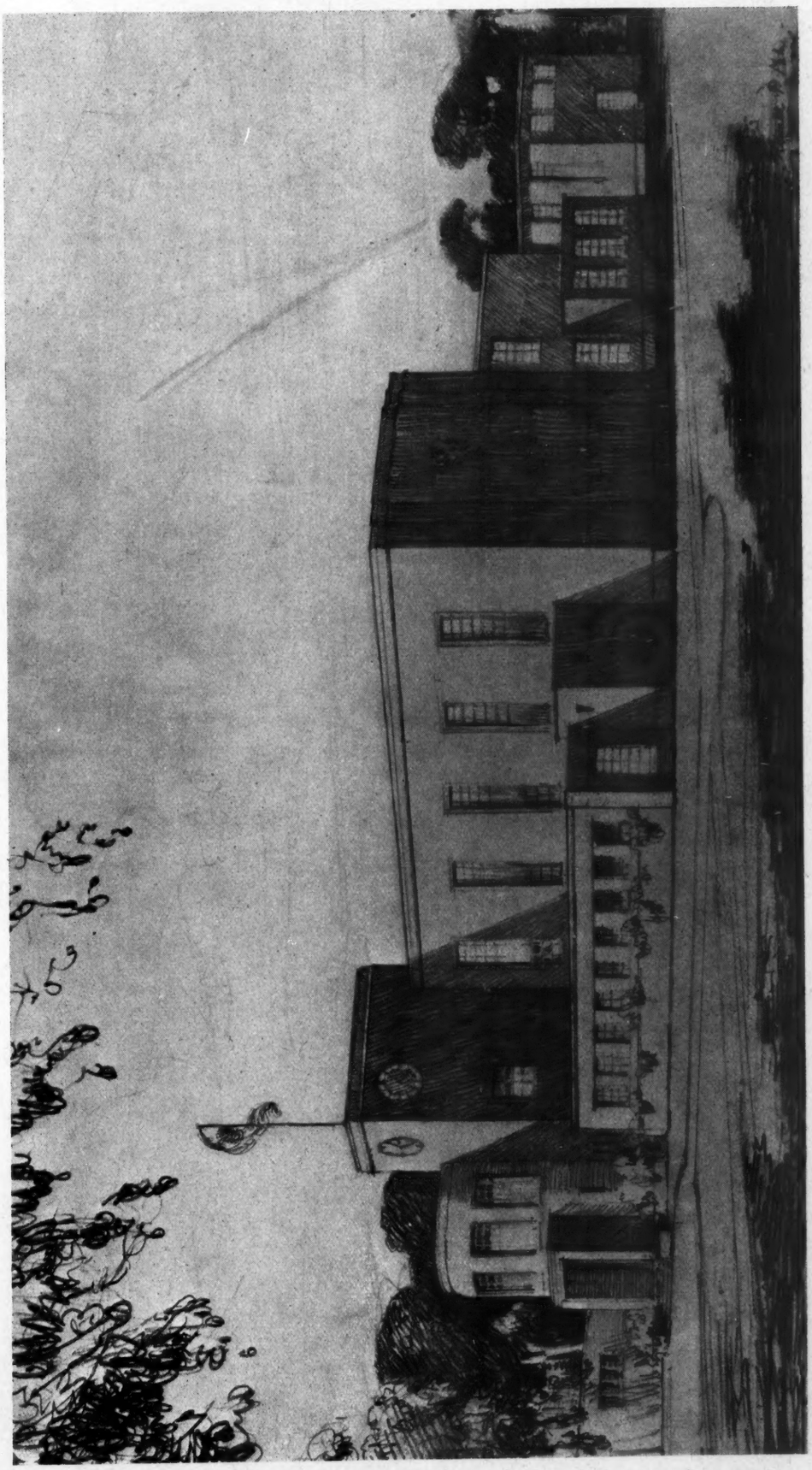
CAIRO CATHEDRAL : Perspective View.
MR. A. GILBERT SCOTT, F.R.I.B.A., Architect.
(See page 477).



CAIRO CATHEDRAL : Plan of Cathedral and Subsidiary Buildings.

MR. A. GILBERT SCOTT, F.R.I.B.A., Architect.

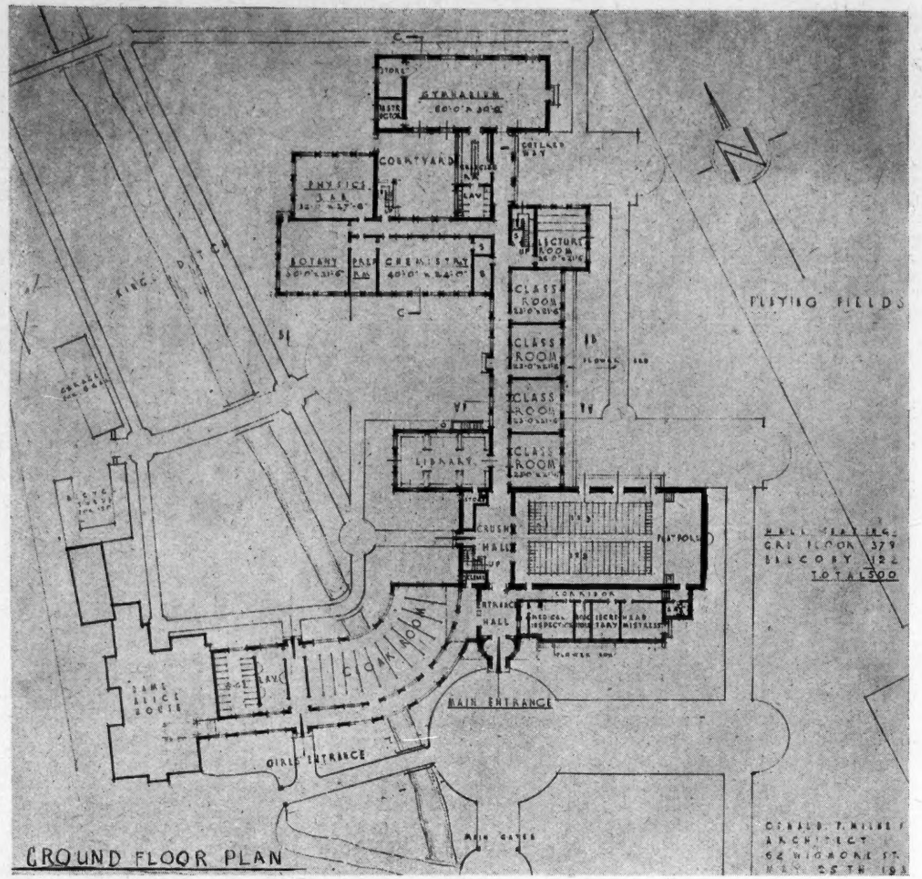
(See page 477.)

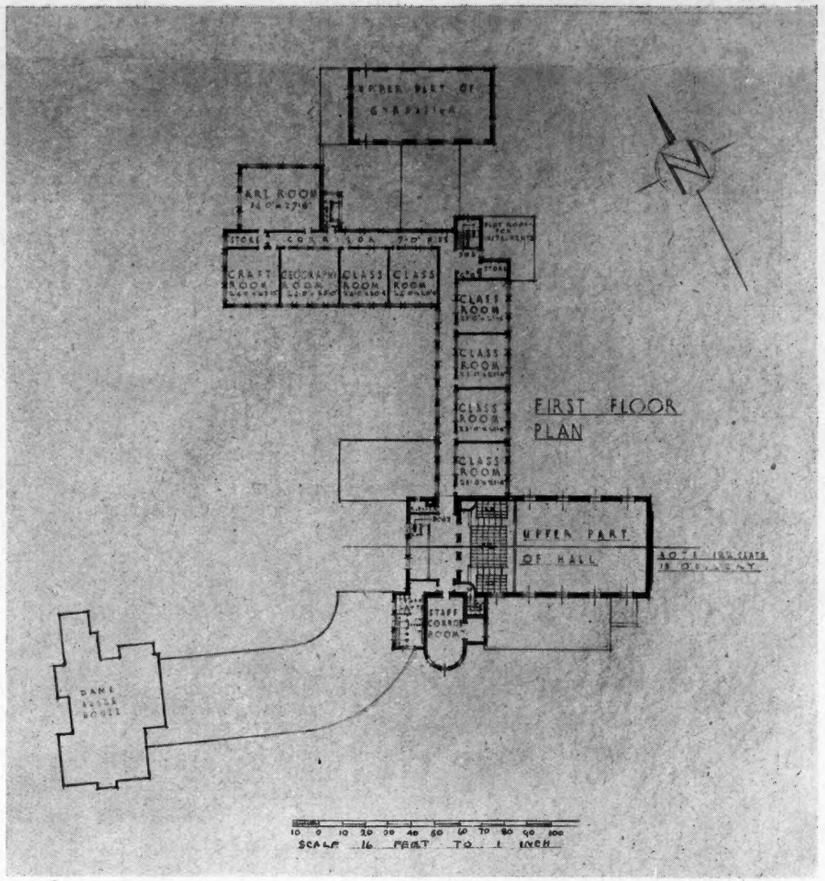


THE GIRLS' MODERN SCHOOL, BEDFORD : Perspective View.

MR. OSWALD P. MILNE, F.R.I.B.A., Architect.

(See page 477.)





THE GIRLS' MODERN SCHOOL, BEDFORD.

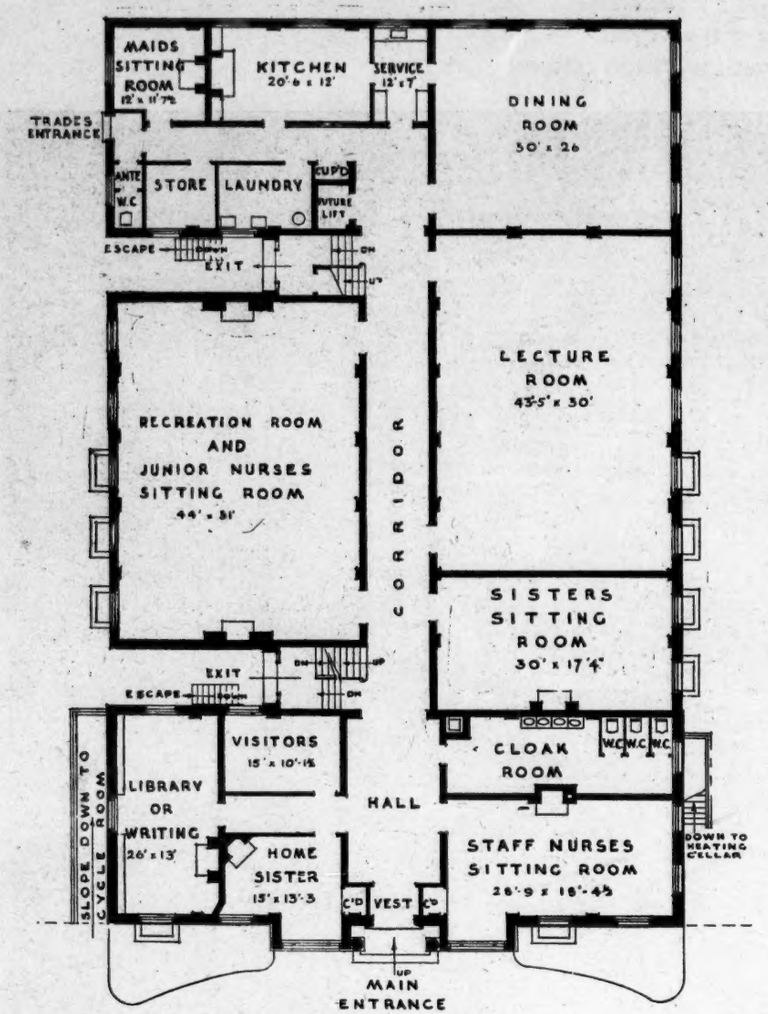
MR. OSWALD P. MILNE, F.R.I.B.A., Architect.

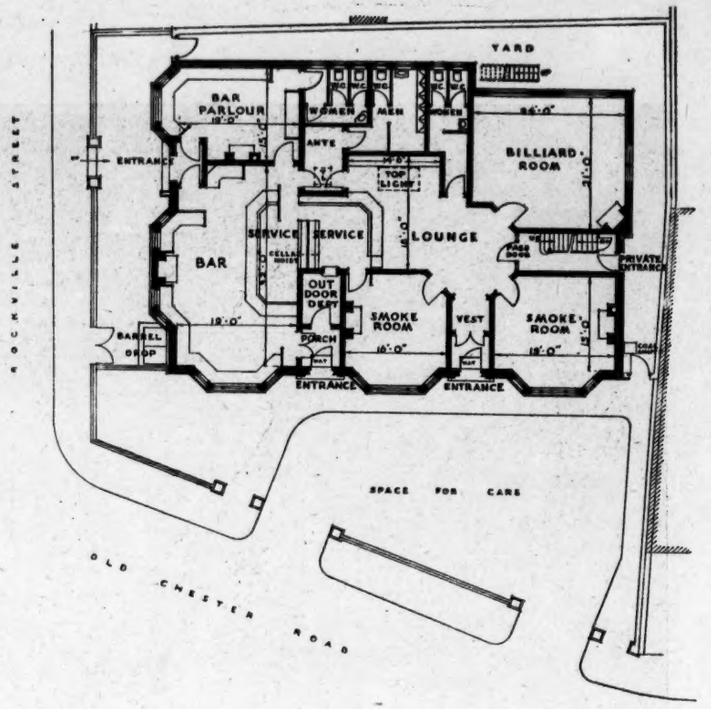
(See page 477.)

NURSES' HOME, VICTORIA CENTRAL HOSPITAL, WALLASEY.

MESSRS. REES AND HOLT, FF.R.I.B.A., Architects.

(See page 477.)





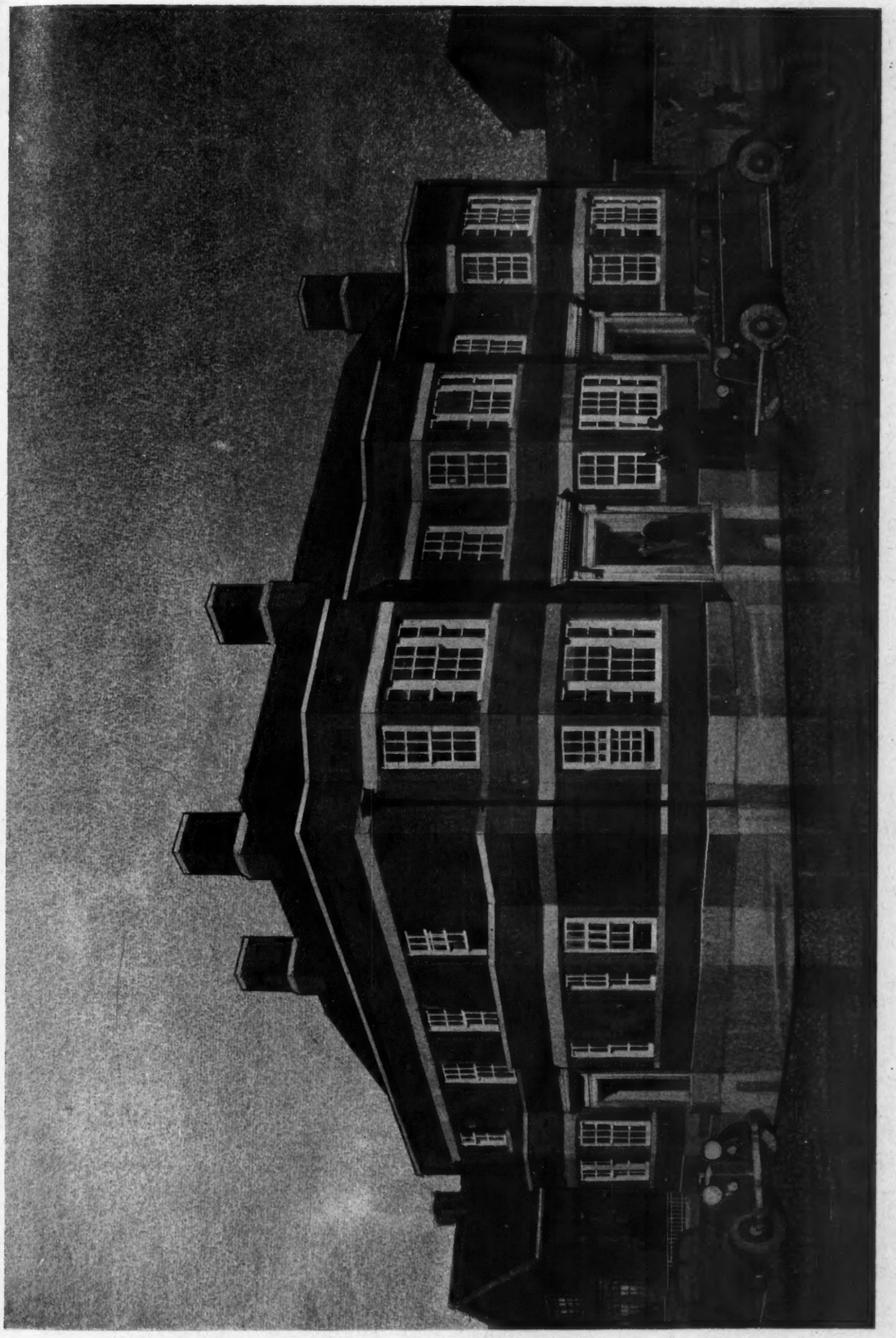
GROUND FLOOR

Above.—ROCKVILLA HOTEL, BIRKENHEAD.

Left.—NURSES' HOME, VICTORIA CENTRAL HOSPITAL, WALLASEY.

MESSRS. REES AND HOLT, FF.R.I.B.A., Architects.

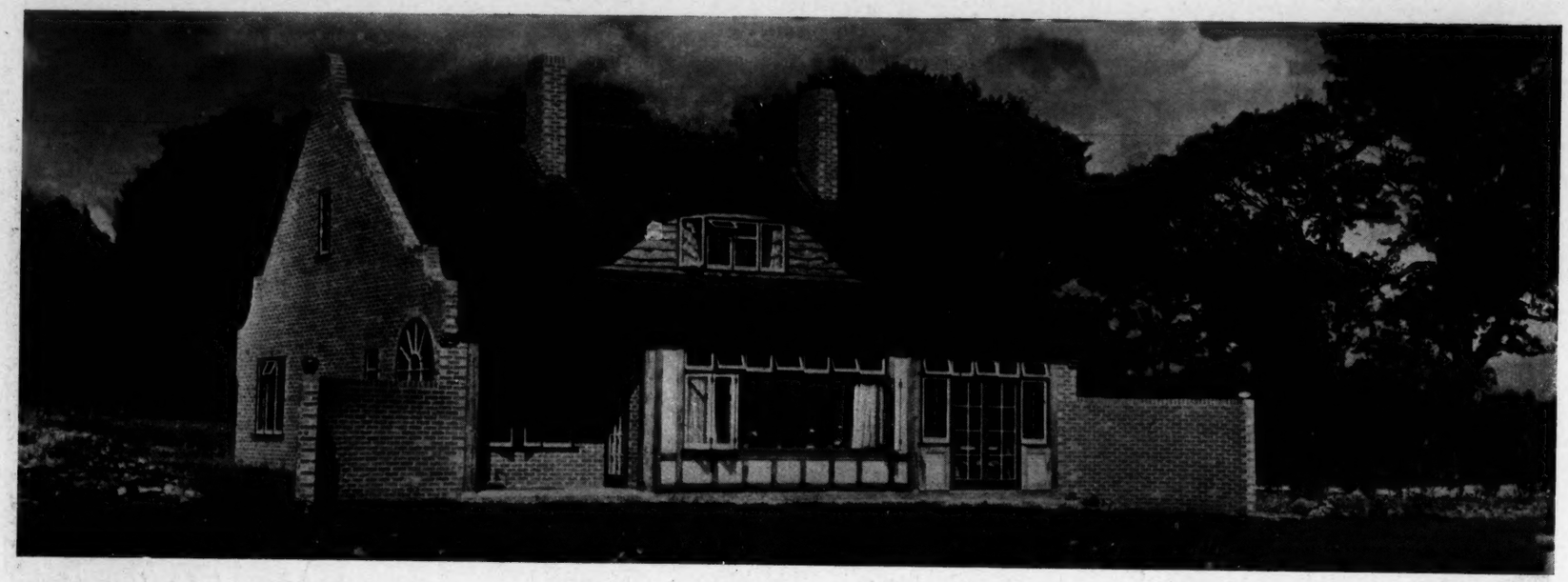
(See page 477.)



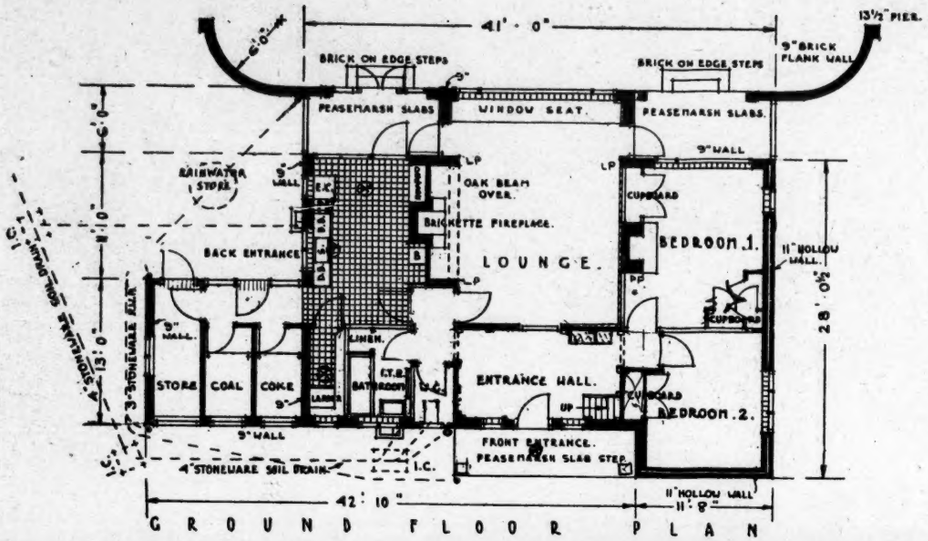
ROCKVILLA HOTEL, OLD CHESTER ROAD, BIRKENHEAD.

MESSRS. REES AND HOLT, FF.R.I.B.A., Architects.

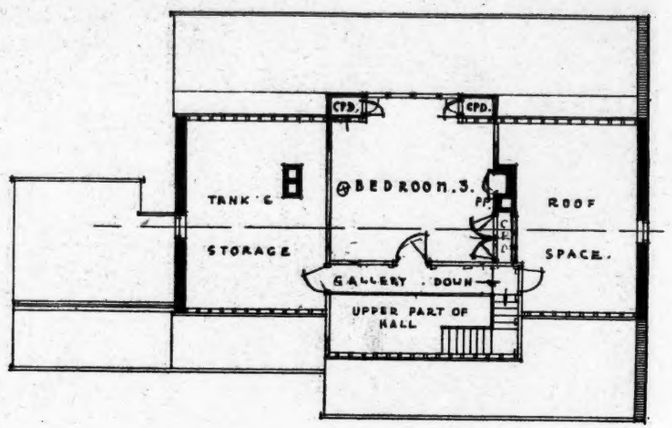
(See page 477.)



GARDEN FRONT



GROUND FLOOR PLAN



FIRST FLOOR PLAN

"ROFFENS," ALTON, HANTS.

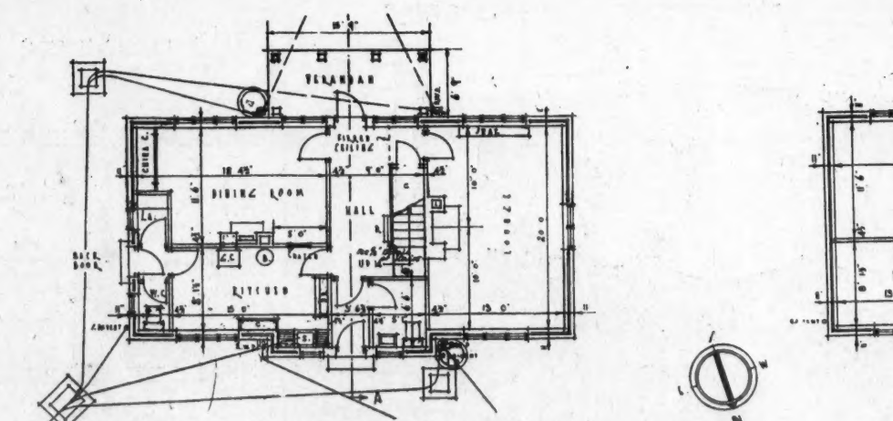
MR. R. LETHIEULLIER GILBERT, A.I.A.A., Architect.

(See page 477.)

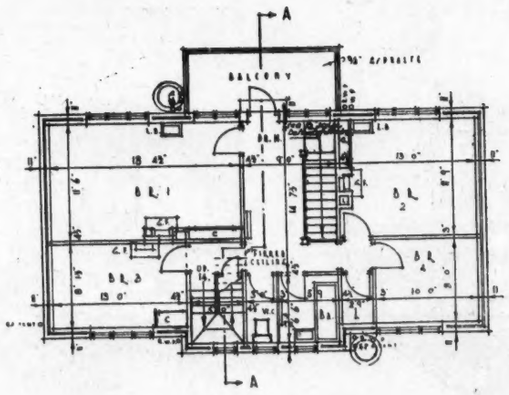
"ROFFENS," ALTON, HANTS.

MR. R. LETHIEULLIER GILBERT, A.I.A.A., Architect.

(See page 477.)



Ground Floor Plan

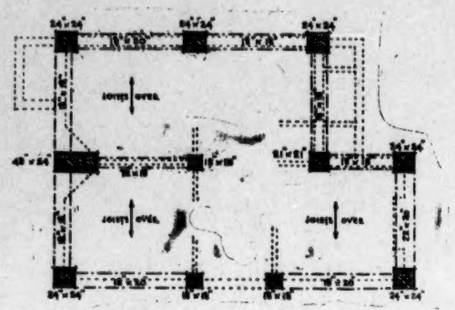


First Floor Plan

"BIBURY," LINKS DRIVE, CHELMSFORD.

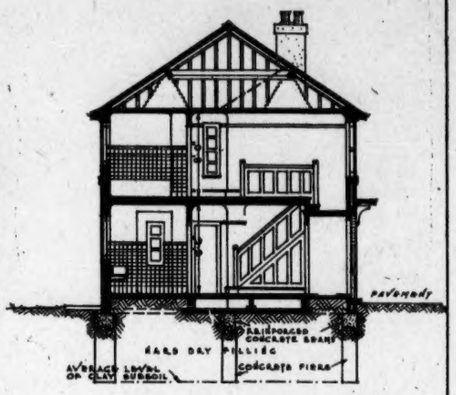
MR. KENNETH M. B. CROSS, M.A., F.R.I.B.A., Architect.

(See page 477.)

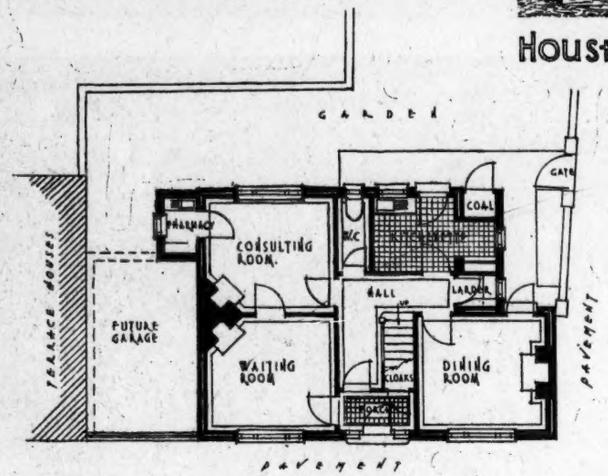


FOUNDATION PLAN
SHOWING CONCRETE PIERS AND REINFORCED CONCRETE BEAMS OVER.

HOUSE FOR A DOCTOR - LIVERPOOL



CROSS SECTION



GROUND FLOOR PLAN

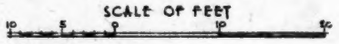
NOTES

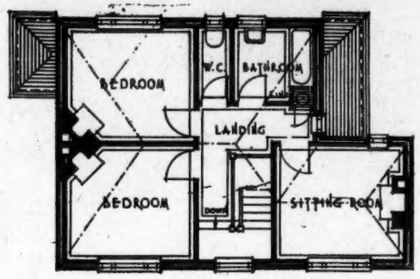
SITE CONSISTING OF FILLED IN GROUND WITH BUILDING CLAY SUBSOIL AT A DEPTH OF 7'0"

FOUNDATIONS CONSIST OF REINFORCED CONCRETE BEAMS SUPPORTED UPON CONCRETE PIERS TAKEN DOWN TO THE CLAY AND PIERS ARE DESIGNED TO DISTRIBUTE A MAXIMUM LOAD OF 4 TONS PER SQ: FOOT. BEAMS ARE REINFORCED WITH ⅝" DIA: STEEL BARS SPACED AT 5" CENTRES.

ALL MAIN WALLS ARE OF 11" CAVITY WITH LOWER PORTION FACED WITH GOLDEN BROWN RUSTIC BRICKS. UPPER PORTION OF WALLS IS ROUGHCASTED ROOFS ARE TILED

THE COST OF HOUSE INCLUDING THE FOUNDATIONS IS 11½ PER CUBIC FOOT.





FIRST FLOOR PLAN

W. Pecorini Delt. R.I.B.A.

A HOUSE FOR A DOCTOR, LIVERPOOL.

MR. WILLIAM PECORINI, L.R.I.B.A., Architect.

(See page 477.)

ILLUSTRATIONS

PLATES

Cairo Cathedral.

This scheme, now under construction, comprises Cathedral and auxiliary buildings, to include assembly hall and bishop's house and archdeacon's house. The site is in the centre of Cairo, adjoining the Museum, and the west frontage faces the River Nile. The foundation work provided some interesting problems, as it was found that about two-thirds of the main Cathedral structure would be upon made ground overlying clay and sandy silt, the remainder over existing masonry or concrete works forming part of an abandoned canal. It was decided by the architect, Mr. Adrian Gilbert Scott, F.R.I.B.A., in consultation with the engineer, Mr. Burnard Geen, to carry the superstructure on Simplex piling—after excavating the underground obstructions to enable the pile foundations to rest in similar soil. This involved digging to the depth of nearly 10 metres, in places considerably below river level. Six hundred and twenty-three piles were driven to carry a designed load of 30 tons each, the four large pile caps under the main piers of the main dome containing 64 piles in each cap.

The superstructure consists of r.c. piers, beams and columns, arches and three domes. Steel roof trusses are provided over the concrete domes to carry tiling and provide ventilation. The wall filling is brickwork, rendered externally and internally. The roof is covered with Lombardic tiles. The main windows are at Cathedral floor level, so as to provide a current of air through the congregation space when necessary. These windows are glazed, and may be opened like louvres. Internal lighting is by floodlighting and by large ornamental pendants. Floors are in marble and terrazzo.

The local supervising architects are Messrs. C. R. Bawden and Newnum, and the general contractors are Messrs. Hettena Bros., Cairo.

The Girls' Modern School, Bedford.

This school, one of the schools of the Harpur Trust Foundation, is to be rehoused in new buildings to be erected on its playing field, which is on the outskirts of Bedford, lying between the River Ouse and the Cardington-road.

The lines of the plan were governed by a number of factors: Dame Alice House, a Georgian building fronting the road, already provides domestic science classrooms, dining accommodation, etc., for the school, and it was desirable to connect this up with the new school buildings. The King's Ditch, a small stream, runs obliquely across the ground dividing the school site from this building. Also, it was held desirable to set the new school well back from the roadway and not in any alignment with Dame Alice House. To meet the problem, the cloakrooms have been planned in a low building which bridges the stream and acts as a connecting link between the old house and the new school. This low block has been curved so as to throw the main entrance to the school back from the roadway.

The various departments of the school have been grouped together, forming well-defined masses in elevation. Near the main entrance are the head mistress's room and offices, the staff room and the school hall. The classrooms are planned on two floors on the main axis, with a south-east aspect. The library is centrally placed. The main corridor leads directly to the gymnasium and changing rooms, while a wing set at right angles houses the science and art rooms, also on two floors.

The school is planned with flat roofs, allowing for future accommodation by the addition of another story, and is to be built of local multi-coloured red bricks, stone being sparingly used for dressings.

The perspective shows the building as it will be seen from the Cardington-road, and indicates how the planning of the various parts aids the general composition and attractive massing of the building. Ample light to every part of the building, cross ventilation in the classrooms, a pleasing aspect and ease of upkeep have been carefully considered. The school will be heated throughout by a central heating system. The contractors are Messrs. Samuel Foster, Ltd., of Kempston, Bedford.

The architect is Mr. Oswald P. Milne, F.R.I.B.A.

Rockvilla Hotel, Birkenhead.

Part of the site of this new building has been occupied by licensed premises for many generations, the old Chester-road on which it stands being the old main coach road from Birkenhead to Chester and the south. The old building has become quite out of date, and is being demolished, together with an adjoining garage and shop, thus doubling the area of the site. Advantage has been taken of the increase to set the building well back to provide a space for cars in front and off the road. The accommodation consists of licensed rooms on the ground floor, the licensee's quarters occupying the first floor. In the basement are storage space and the heating boilers. The public will be accommodated in two smokerooms, a lounge bar, with service counter, a billiard room, a bar parlour and a bar with service counter. Supervision and easy service are features of the plan. The licensee has a private entrance to his flat, a very desirable feature, and one that is insisted on by the local justices. The rooms on the first floor consist of a sitting-room, kitchen, scullery, larder, store, washhouse, coals, w.c., bathroom and w.c., and four bedrooms, linen and boxroom; and a private yard is also provided, with outside stairs from the ground.

The elevations are of the Georgian type and are being carried out in rustic brick, with the dressing in eggshell glazed terra-cotta. The roof is slated.

Internally, all the public rooms will be panelled in oak, the floors being finished in rubber. Lavatory walls will be tiled and the floors covered with quartzite. Seating and counters will be in oak, and a feature of the latter are sliding glazed screens which can be closed down on to the top of the counter to shut off this part of the premises during non-permitted hours.

Messrs. Rees and Holt, FF.R.I.B.A., of Liverpool, are the architects.

"Roffens," Alton, Hants.

Built about two miles outside Alton, this house stands on a hill top overlooking a valley towards the Downs. It was particularly desired by the owner that the house should "merge into the landscape" and be an English house, comfortable and easy to run for two people without servants. The roof is carried out in cedar wood tiles, which have weathered a beautiful silver grey, a pleasant match with the timbering and the pinky brown colour of the bricks.

Two loggias have been provided, of ample proportions, open only to the south, with a fully glazed door from the centre lounge to each. The loggia to the kitchen is completely shut away from the coldest winds by a glazed screen. This enables the preparation of food and many small jobs usually done in the kitchen to be carried out in sunshine. Wing walls curving outwards act as wind breaks from the northern quarters.

The plan allows for all living rooms, except one small bedroom, to face south, the northern side being taken up with entrance, larder, w.c., coals, bathroom, etc. The house being planned for two people, one large lounge was asked for. This was given a window 13 ft. 6 in. wide and 6 ft. 6 in. high. In summer the whole can be rolled back, folding completely to the sides.

Oak panelling, flush doors in oak, and fibre board ceiling ensure freedom from future decoration costs, dust and cracked plaster. The floor is of oak and the ceiling panelled with wide oak boards. The hall is oak-panelled, and a small staircase leads up to a panelled balustraded gallery, off which opens one bedroom, tanks and store. All bedrooms have a wardrobe cupboard fitment built in, with the doors opening the full height for full freedom of usage.

All water supply is by rainwater only. This is run from the roofs down into a 5,000-gallon circular tank, 13 ft. 6 in. deep and about 9 ft. wide, built of brick and rendered in cement. From here it is pumped up into a 150-gallon storage tank in the roof by an electric pump that is automatically controlled by the level of the water, the rain water running through two filter beds before emptying into the large tank.

The cost was £1,200. The builders were W. H. Crispe and Son, Medstead, Hants, and the following firms were also associated with the work: Midland Woodworking Co., windows generally; Educational Supply Association, Ltd., "Morlite" sliding; A. Smith and Sons, Woking, hot water and plumbing; W. Bradley and Sons, Woking, electricians; W. H. Colt (London), Ltd., tiles and roofing work; Jobson and Beckwith, Ltd., "Yeomax" pump; Rustic Flettons, ¼ H.P. bricks.

Mr. R. Lethieullier Gilbert, A.I.A.A., is the architect.

Victoria Central Hospital, Wallasey: Nurses' Home.

This new building, which is now in course of erection, will accommodate sixty nurses, and will take the place of several semi-detached villas which, together with bedrooms in the hospital itself, are used to accommodate the nursing staff.

The accommodation has been arranged on three floors and basement. The ground floor contains the main entrance hall and corridor giving access to the homes, sisters' room, library and reading room, day lavatories, visitors' room, sitting-rooms for sisters and staff nurses, general recreation room, lecture room, dining-room with service, kitchen, store, laundry and sitting-room and lavatory for domestic staff. Provision has been made for a future passenger lift to all floors. A staircase at either end of the building gives access to the two bedroom floors. The minimum size of bedroom is 100 sq. ft. Each has a fitted wardrobe and chest of drawers and a lavatory bowl. Sanitary accommodation is generous and is placed at each end of the building, and there is a double set of fire escape stairs. The basement accommodates the boiler-house, cycle room and store rooms.

The construction is fire-resisting. The walls are in brick faced with rustic bricks, the dressings being in reconstructed stone. The pitched roofs are slated and the flats finished with asphalt. All windows are in wood. Internally, the finish has been left very simple. The walls are plastered and the floors are wood block, except the lavatories, which are tiles and which also have a tiled dado. Flush doors will be adopted throughout and will have fanlights over to ensure good cross-ventilation. The heating will be by low-pressure hot water radiators, a separate boiler heating the domestic hot water. The lighting will be by electricity, and power plugs, wireless and electric clocks will also be installed. The amount of the contract is £19,737. Messrs. James Hopley and Sons, of Little Sutton, are the contractors.

Messrs. Rees and Holt, FF.R.I.B.A., of Liverpool, are the architects.

"Bibury," Links-drive, Chelmsford.

The roof of this house is covered with hand-made, sand-faced plain tiles, and the external cavity walls are faced with local multi-coloured bricks. Standard metal windows, painted black, are set in wood frames finished broken white. Messrs. Henry Potter (Wm. Sharp), Ltd., were the builders.

Mr. Kenneth M. B. Cross, M.A., F.R.I.B.A., is the architect.

A Doctor's House at Liverpool.

This house was specially designed for the requirements of a doctor. The foundation work is of rather unusual character for a house of this size, and saved about £50 upon the cost of the structure. The builder is Mr. John Worthington, of Liverpool.

Mr. William Pecorini, L.R.I.B.A., is the architect.

THE "AIRPORTS AND AIRWAYS" EXHIBITION

THE "Airports and Airways" Exhibition, at the R.I.B.A., 66, Portland-place, W., was opened on Friday, February 19, by Lord Swinton, Minister for Air.

Mr. Percy Thomas, P.R.I.B.A., said that architects were concerned with anything in the nature of planning, and airports and airways were concerned with planning to a vital extent. The time was not far distant when every town or district would have its airport.

Lord Swinton said that the Institute, in organising the exhibition, had performed a real service to all those interested, technically and commercially, in airports and services. All who had anything to do with air services must have one object in view—an object which, without doubt, they would attain—and that was to make their commercial air services, internally and externally, self-supporting. Indeed, the airways would not attain a position in civil life, when the fears and anxieties of the present time were past, and become the ways of peace until they could "fly on their own wings." A subsidised undertaking would not exist indefinitely. Their aim must be to make civil aviation self-supporting, and as nearly as possible self-supporting the ground organisations. Though it might be some time before the airports which great cities had built and were building became completely self-supporting, he believed they had not only shown vision and public spirit but a great deal of practical good sense. They created a real public service.

Mr. H. S. Goodhart-Rendel, chairman of the exhibition sub-committee, proposed a vote of thanks to Lord Swinton, who afterwards viewed the exhibition.

THE EXHIBITION DESCRIBED.

The purposes of the exhibition are as follows:—(1) To illustrate the rapidly growing influence of civil aviation on the life of the Empire. (2) To emphasise the necessity for adequate organisation to meet its requirements, both in the provision and siting of airports, and in their detail planning and equipment. The exhibition has been arranged in response to a request from several of the leading municipalities in the country who are either considering the creation of their own airports or, where they already have them, wish to cultivate "airmindedness" in their citizens. After being shown in London the exhibition will tour the larger cities and towns in the country.

The exhibition has been designed to have a direct appeal to the public. It consists of some 480 photographic enlargements, 16 models, and numerous diagrams and maps. These exhibits present the more interesting and essential facts concerning air travel and its ground organisation in a popular way and without entering into abstruse technical matters.

There are three main sections, as follows:—(1) Aircraft; (2) ground requirements; (3) air photography. The exhibition has been organised by a special committee consisting of aviation experts and of members of the R.I.B.A. experienced in airport planning and design. A feature of the organisation has been the large amount of help received from government bodies and aviation authorities, foreign as well as British.

In general terms, the architect planning an airport has to make provision—with the aid of numerous specialists—for four principal services. The first—service for the public—comprises waiting rooms, restaurants, bars, shops, customs, passport and immigration, and police. The second—service for the staff—includes administration offices for operating companies, rooms for pilots, traffic offices and ground staff. The third—service for aircraft—consists of hangars, workshops and refuelling arrangements. The fourth—safety and control service—includes wind indicators, boundary and floodlights, control tower and equipment, directional wireless, blind landing equipment, fire-fighting and ambulance.

But before the detail planning of the airport comes the important task of selecting a suitable site. This, which is in the province of the town planner, is not easy, particularly in a highly developed country like England. Such matters as ease and means of access from the town centre, the existence or restriction of neighbouring obstructions, liability of the site to fog, dryness of the soil and avoidance of noise in residential areas all require close study. These points are illustrated in the exhibition.

In selecting examples of airports for illustration, the exhibition organisers have kept to those already existing. They were offered numerous provisional or idealistic schemes but rejected them, partly for reasons of space, but mainly because their object was to show what has so far been accomplished. One exception of importance has, however, been made. The new buildings at Le Bourget, now nearing completion, are shown in a large perspective drawing, which has been specially sent from Paris for the exhibition.

The Central Model.

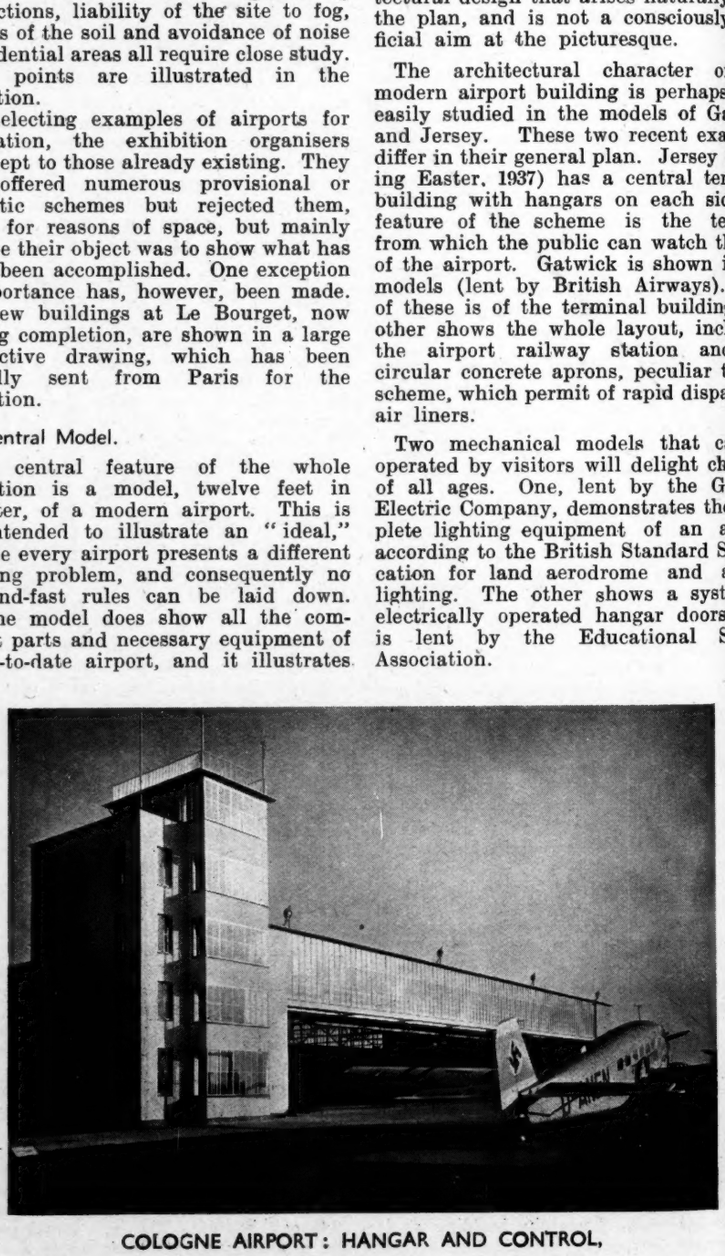
The central feature of the whole exhibition is a model, twelve feet in diameter, of a modern airport. This is not intended to illustrate an "ideal," because every airport presents a different planning problem, and consequently no hard-and-fast rules can be laid down. But the model does show all the component parts and necessary equipment of an up-to-date airport, and it illustrates the general planning requirements, including runway arrangement. It has a full lighting equipment in miniature, and is made realistic with numerous tiny aeroplanes, cars and human figures.

The model has been lent by the Cement Marketing Company, who have had it specially made for the exhibition. So modern a construction as an airport inevitably calls for the use of modern materials such as concrete. Concrete in its various forms fulfils many structural requirements, from the huge runways to the smallest buildings.

The world's best examples of airport buildings are shown in some 130 photographic enlargements. The views illustrate not only planning requirements, but also the daily life of the airport. They show also that many municipalities regard their airport as deserving of the best architectural consideration. Such airport buildings as those at Johannesburg, Stockholm, Cologne, Jersey, Gatwick, Hanover and Lyons are very attractive. It is obvious, also, that the airport is rapidly developing its own type of architectural design that arises naturally from the plan, and is not a consciously artificial aim at the picturesque.

The architectural character of the modern airport building is perhaps most easily studied in the models of Gatwick and Jersey. These two recent examples differ in their general plan. Jersey (opening Easter, 1937) has a central terminal building with hangars on each side. A feature of the scheme is the terraces from which the public can watch the life of the airport. Gatwick is shown in two models (lent by British Airways). One of these is of the terminal building; the other shows the whole layout, including the airport railway station and the circular concrete aprons, peculiar to this scheme, which permit of rapid dispatch of air liners.

Two mechanical models that can be operated by visitors will delight children of all ages. One, lent by the General Electric Company, demonstrates the complete lighting equipment of an airport according to the British Standard Specification for land aerodrome and airway lighting. The other shows a system of electrically operated hangar doors; this is lent by the Educational Supply Association.



COLOGNE AIRPORT: HANGAR AND CONTROL,

PROFESSOR MEHRTENS, Architect.

The World's Air Routes.

The extent to which the world is already covered by air services is shown in a map, specially prepared for the exhibition. Completed only a few days before the opening ceremony, it is right up to date. Dozens of maps and brochures in a variety of foreign languages had to be obtained in order that the information should be accurate. The map, which was made entirely by three artist-illustrators working voluntarily, measures ten feet by seven.

Two smaller maps show respectively the air routes of Europe in detail, and the internal air routes and airports of the British Isles. Other attractive and interesting diagrams illustrate a variety of matters such as how aeroplanes land at night and in fog, the direction-finding wireless equipment of an airport (that of Jersey has been selected for illustration) and the siting of airports to avoid noise disturbance in adjacent residential areas.

Sub-section on Ground Equipment.

In an interesting group of photographs are shown close-up views of the types of mechanical equipment necessary in the modern airport. This includes such things as wind socks, boundary lights, flood-lights, beacons and wireless equipment. An airport clock with a large concrete dial that allows the time to be seen from the air is shown in a small model, lent by Smith's English Clocks.

The air photography section includes sub-sections dealing with the following aspects:—Pictorial; Scientific uses, air survey; archæological survey; town planning study and infra-red photography; scientific research and exploration.

The aircraft section affords an interesting photographic survey and record of the progress of flight from early times up to the present day. The exhibition is one of great interest and value, and should make a special appeal to the general public.

WORSHIPFUL COMPANY OF CARPENTERS

COURT DINNER.

On Thursday, February 18, a Court Dinner was given by the Worshipful Company of Carpenters at the Carpenters' Hall, London Wall, E.C. Among those present were: The Master (Sir Banister Fletcher, M.Arch., P.P.R.I.B.A.), Mr. Percy E. Thomas, O.B.E., P.R.I.B.A., Sir William Llewellyn, G.C.V.O., P.R.A., Sir Giles Gilbert Scott, R.A., P.P.R.I.B.A., Mr. Sydney Lee, R.A., R.E., Sir Raymond Unwin, P.P.R.I.B.A., Sir Eric Maclagan, C.B.E., Sir Herbert Hughes-Stanton, R.A., P.R.W.S., Sir W. Goscombe John, R.A., Sir Charles Peers, C.B.E., F.S.A., M.A., Mr. Robert M. Holland-Martin, C.B., F.S.A., and many other distinguished architects and others.

The Master, in proposing the toast of "The Arts and Crafts," said that the Carpenters Company had from its foundation in A.D. 1333 been connected with the building industry, and, since the latter half of the last century, had identified itself with architecture and the crafts in many ways. England, he said, without its architecture, would be as a frame without its picture. The architecture of England from Stonehenge to the present day was one long line of fine buildings.

Having referred to the mediæval period, Sir Banister went on to say that in the 16th century came the impetus of the Renaissance, which produced the stately Elizabethan mansions and country houses which were to be found in every corner of England. "During the Stuart period," he said, "we have the works of Inigo Jones and those of Sir Christopher Wren—the greatest of all English architects—who transformed the City of London by the erection of 50 City churches, St. Paul's Cathedral, and many another building. We know the influence of Wren and his successors, who have given us a marvellous heritage which forms the foundation of our art to-day. I have no time to deal with the sister arts of painting and sculpture, but we know that a perfect building is one in which all three are combined in one harmonious whole. The 19th century witnessed the break-up of the orderly evolution of architecture, and resulted in our freedom of design." The speaker then referred to the thoughtless destruction of many historic buildings, and spoke of the sympathetic repair of many old castles, abbey churches and manor-houses by the Ancient Monuments Board of H.M. Office of Works. Referring to the demolition of All Hallows, Lombard-street, he said, "It seems to me that the only method of protecting our ancient City churches is to have them scheduled as 'historic monuments,' for, in fact, they do not really belong to the Church of England as much as they belong to the nation as a whole, and it is evident that the Church authorities cannot be relied upon to preserve these churches. . . . The House of Commons," he continued, "seems fully alive to the necessity of preserving our architectural heritage, but that more power is required to ensure preservation is indicated by the debate introduced by Mr. Alfred Bossom, which clearly shows the need for compulsory preservation, and the Press, particularly *The Times*, and in the technical press such papers as *The Builder* have taken up the subject with enthusiasm." It could be safely asserted that architects to-day were better trained for their profession than at any previous period. "Since the Great War," he said, "waves of so-called 'art' have been dashing against the shores of England, and under the names of 'functionalism' and other horrid appellations, have been foisted on the public. The new forms thus introduced consist in throwing aside tradition and revelling in horizontal bands of glass and solid balconies, shutting out the sunlight. Indeed, many of the new houses dotted over parts of England have the appearance of a combination of cardboard and glass, out of keeping with our countryside." He thought this wave of Continental novelty would take no lasting root in this country. He preferred to keep to English tradition with the necessary modifications to fulfil the purpose for which the buildings were designed.

Referring to the Town and Country Planning Act, 1932, he said that if properly administered it would be of far-reaching importance. It was a great step forward, and ensured that land, whether built on or not, should be regulated for the public good in regard to amenities, while providing for the preservation of buildings of historic interest. The erection of Faraday House in Queen Victoria-street by the Post Office (a building 134 ft. high, with towers 11ft. higher) obscured the view of the peristyle of the dome of St. Paul's Cathedral from the south. "It is to be hoped," he said, "that His Majesty's Government—which in this case is exempt from its own Acts—will in future undertakings submit to the same measure of control as a private person, for it is absurd that the community should have to keep to regulations which are necessary to preserve amenities, but that such regulations are not binding on the Government."

The Master then mentioned the lack of skilled labour in the building industry, which had now become acute. He said he thought the Carpenters' Company and other City companies were doing much for the various crafts by maintaining the Trades Training School at Great Tichfield-street, where instruction was given in all the building crafts to the 400 students attending the classes. But he thought it was of the greatest importance that the training of skilled craftsmen should be undertaken more thoroughly by the Government; some of the sums spent on education should be available for reviving the old system of apprenticeship which, with the additional instruction at evening craft schools, was the only efficient way of training craftsmen.

Sir William Llewellyn, G.C.V.O., P.R.A., replying, referred to the houses of the 18th century, and said that they were sumptuous in their character and had rich furnishing, with pictures painted to suit their surroundings. The pictures of the period, he said, were heavily framed and rich in character, and would not, consequently, suit the houses of to-day. The tendency to-day was to make lighter paintings with light frames to suit our modern buildings. Sir Banister had stated that architecture was much appreciated to-day, but he (the speaker) considered that judging by the attendance at the exhibition at the Royal Academy, people did not care about it, for scarcely a soul, he said, visited it except for those who were directly interested, although the exhibition had been opened to stimulate interest in architecture. Many people, he thought, looked on art without any understanding; it was to them just one of the frills of life, but he hoped we could look forward to the day when people would look on architecture as a national asset.

Mr. Percy E. Thomas, O.B.E., P.R.I.B.A., also responding, said he thought the nearer our buildings resembled boxes with holes in them, the less people would regard them as connected with art at all. Much of the ugliness we saw around us was due to the lack of local authorities doing anything to cultivate a love for beauty. He felt we could take a very useful lesson from Italy, where a law was passed a few years ago under which a certain part of every grant made for building purposes had to be spent on the artistic decoration of the buildings erected. He felt that the question of public taste needed great consideration. Probably the time had come for us to call a halt in art; and he felt it would serve art if we went back a little and were half as clever as the ancients in the simple arts and crafts. He concluded by congratulating Sir Banister Fletcher on adding yet another honour, on his being elected "Master" of the Company, to those he had already in his distinguished career, and said it was comforting to find a master craftsman in the chair.

Sir Eric Maclagan, C.B.E., also responded.

Mr. Robert M. Holland-Martin, C.B., F.S.A., proposing the toast of "Worshipful Company of Carpenters," said the President of the Royal Academy had referred to the exceedingly interesting exhibition at Burlington House; many people, he (the speaker) thought, were frightened to go there because they felt that they would see nothing but plans. Architects would not make allowance for the ignorance of the people, and they must consider this more than they did,

THE ARCHITECTURAL ASSOCIATION

THE NEW BUILDINGS FOR THE UNIVERSITY OF LONDON.

A MEETING of the Architectural Association was held on Tuesday evening at 34-36, Bedford-square, W.C., with Mr. L. H. Bucknell, F.R.I.B.A. (President), in the chair, when a lecture was delivered by Mr. Charles Holden, F.R.I.B.A., entitled "Questions and Answers on the New Buildings for the University of London." The latter part of this address consisted of answers to questions which were put orally by Mr. D. Bethune Williams, but the earlier part consisted of a lecture illustrated by lantern slides.

Explaining some illustrations, which showed the evolution of the plan, Mr. Holden said that a printed document, entitled "University of London, Bloomsbury Site: Instructions Relating to an Architectural Design," a special Act of Parliament, and a plan of the site showing the land to be given up to road widening around the boundaries, provided the material for him to make a start with the plans. The instructions indicated a desire for an open centre or quadrangle, for a tower and for a certain progressive development of the site; but he was in no way bound by these suggestions. A schedule gave in considerable detail the requirements of the several units which were included in the programme, and of these units there were eleven in all, as follows: Administration Block, University Library, University Hall, Institute of Historical Research, O.T.C. premises, Courtauld Institute of Art, University Union, Birkbeck College, School of Oriental Studies, School of Slavonic Studies and London Day Training College. Provision was to be made for a 20 per cent. extension to each of these units, except the Senate House and University Hall. In the case of the former of these the extension was limited to 10 per cent., and in the case of the latter no extension was required.

A study of the ordnance map of the district showed an orderly lay-out, with main roads running south to north and secondary roads almost at right angles to these. Open squares near the site gave a degree of openness rarely found near the centre of a great city. The proximity of the British Museum, University College and the School of Hygiene and Tropical Medicine gave every promise of the neighbourhood becoming a real centre of learning. In this setting the new University group acquired a greater significance. The Act of Parliament gave power to close streets and open spaces on condition that an equal area in open spaces should be retained.

The "Spinal" Plan.

The provision of the open centre or quadrangle, as suggested, seemed at first to be the natural approach to the problem, but he had found it difficult within limits thus fixed to provide for adequate extensions; so, after trying various experiments, he had adopted a spinal plan, and this had been accepted, and subsequently modified into its present form. Whether future sections would follow this plan would depend to a great extent on how far it was capable of being adapted to the unknown factors of the buildings which would occupy the remainder of the site, but it was not his intention to twist and distort the several remaining units so as to fit them into the pattern of the plan. He held that the plan presented a high degree of flexibility, and he had found it capable of a wide range of adjustment to accommodate a large or small department, large rooms or small rooms, or both.

Construction.

Coming to the type of construction employed, the lecturer said that the life of university buildings, unlike business premises, was to be regarded in terms of centuries rather than in decades. He was fully aware of the present-day tendency to look upon change as the order of the day and to distrust stabilisation, but the architecture of any period was little more than the enclosing of space, and given generous and well-lighted space which could be divided and redivided at will, and which was conveniently accessible and provided with adequate service accommodation, there could be little doubt that the more permanent building would continue to give useful service over a very long period of years without becoming obsolete. Therefore, he had decided to adopt brick and stone construction for the walls, of a strength adequate to bear any reasonable load which they might be called upon to carry, while the floors would be of steel and concrete construction, spanning from external wall to external wall without any intermediate support, thus leaving the whole area between the outer walls available for subdivision to suit the changing needs of changing times. In common with other less permanent methods, this kind of construction had its limitations. For instance, owing to the strength necessary in the weight-bearing walls the window spacing could not be increased indefinitely, and this control had a definite bearing upon the architectural aspect of the buildings in that it would not permit of the long, horizontal window.

The lecturer explained that he had no prejudice against frame construction: he had used it, and would use it again in its proper place. On the subject of windows, he pointed out in a later slide that he had "syncopated" these—*i.e.*, there were seven in the top story above six in the lower ones. By this means he broke the vertical punctuation or "beat" of his building, and passed with ease from the vertical to the horizontal movement.

Some External Refinements.

Attention was called to other features in the slides. All knew, said the lecturer, how easy it was to break up a long frontage with large or small projections, but this was not done in these days; not even with the rainwater pipe. Yet the rainwater pipe was a necessary feature, and it was worth while to be honest about it and give it a place in the sun at appropriate intervals, even though it did break up a long, horizontal line.

The slides showed the rainwater pipes used with decorative effect, but there were no soil pipes visible; these, it was explained, were all snugly tucked away in ventilated internal ducts, where they were accessible for every foot of their length, to the great satisfaction of the plumber and resident engineer.

A little slit over nearly every window served a triple purpose. It relieved the stone head from undue pressure; it served as a means of ventilating the floors, and it continued the line of the top of the stone architrave on the feature windows which in themselves marked the more important rooms. A long balcony at the principal floor gave a strong base line on a scale large enough to bind the buildings together, and yet not too large for its own immediate surroundings. This balcony was on the same level as a large string course on the British Museum opposite.

Another detail to which attention was drawn was the projecting string course. A string course of which the top could not be seen, said the lecturer, was ineffectual, except at the external mitres. To avoid this, he had arranged the weatherings at varying angles so as to be slightly inclined to the eye from a normal viewpoint. The full value of this would not become evident until the top surfaces were bleached with the weather, giving substance and character to an otherwise drawing-board device. With few exceptions, all stone faces in the building had been tooled with vertical cuts know as "batts"; these varied from nine to five batts to the inch, the larger cuts being used for the string course. This was intended to accelerate the bleaching of the stone and to minimise the effect of slight surface blemishes.

Windows were designed to the human scale of the occupants of the rooms, not for so many lines on the elevation. They gave the widest range of adjustment, a small horizontal slit at sill-level supplying fresh air without creating a draught. A pair of small side-hung casements gave a clear view, free of obstruction, and a horizontal pivot-hung light at the top allowed a quick change of air. The whole window could be cleaned without anyone getting on the sill.

Foundations.

The lecturer told the story of the laying of the foundations. On sinking trial holes, he said, it had been found that after passing through good gravel, water was encountered lying on the clay; this water being at a uniform level and sometimes as much as 4 ft. deep. If the foundations were laid on the gravel, it was feared that the water might be drained off in consequence of building operations in the neighbourhood, in which event the finer material in the gravel would be carried away, and there would be serious risk of settlement. Piling had been resorted to.

Floors were designed to give solid ceiling at a uniform level, the beams being raised above the floor slab. The floor boards passed over the top of the beams and the hollow space was used for electric conduits, pipes, etc., the girders being drilled at regular intervals for this purpose. Screw boards gave access to pipe runs. The flat ceiling enabled rooms to be sub-divided at will without unsightly beams showing irregularly in the ceiling.

An interesting detail shown in one of the slides was the railing to the balcony. The lecturer said that he and Mr. Hope Bagenal travelled all over Sicily in search of a suitable railing, but finally designed one for themselves. The railings were not fixed to the balcony in the usual manner: they rested on little bronze balls with very short nipples fitting loosely into small sinkings in the stone. The real fixing was by means of stays attached to vertical bars which occurred at regular intervals. These stays were let well into the stone about 8 in. back from the edge of the balcony, thus avoiding the risk of spalling. Slides of various interiors were then shown and described.

A vote of thanks was passed to the lecturer.

CHARING CROSS BRIDGE

L.C.C. COMMITTEES' CONSIDERATION OF TRAFFIC ADVISORY COMMITTEE'S REPORT.

A JOINT report of the Highways Committee, the Finance Committee, and the Town Planning and Building Regulation Committee of the London County Council was placed before the Council on Tuesday. The report contained the Committees' considerations of the Report of the London and Home Counties Traffic Advisory Committee on their reference from the Minister of Transport to "review the case for safeguarding the possibility of constructing a road bridge in the neighbourhood of Charing Cross, in so far as such case rests upon the considerations of traffic, with due regard to the effects of any concentration of traffic at points in central London, on both sides of the river, which might result from the construction of a new bridge, and in due course submit to him a report embodying their conclusions."

In remitting this question to the Traffic Advisory Committee, the Minister stated that the following factors had emerged since the matter was last considered: (1) The rebuilding of Waterloo-bridge for six lines of vehicular traffic; (2) the proposal to acquire considerable areas on the south side of the river in order to control redevelopment; (3) the possibility that the Southern Railway may desire to deal with the site occupied by their hotel at Charing Cross; (4) representations made by the Commissioners of Crown Lands that the redevelopment of their properties in the Strand cannot be indefinitely held in abeyance; (5) the need for various improvement schemes whose lay-out cannot well be determined without a decision as to the ultimate desirability of the bridge.

The L.C.C. Committees discuss in their report the problem under various heads.

"The case for a bridge at Charing Cross," they state, "may be set out in the form of the conclusions drawn by the Traffic Advisory Committee from their examination of the problem: (1) There is need for improved cross-river facilities in the vicinity of Charing Cross. (2) The necessary improvement of cross-river facilities in the neighbourhood of Charing Cross cannot be provided by other means than a new bridge in the locality. (3) A tunnel could not be regarded as an alternative to a road bridge. (4) The removal of Charing Cross railway station to the south side of the river is not a practical proposition. (5) The northern bridge-head can only be sited somewhere between Northumberland-avenue and a line drawn from Agar-street, Strand, to the Thames. (6) If a road bridge is to be constructed at Charing Cross, it is essential that adequate approaches should be provided on both sides of the river. (7) A new bridge would be likely to affect adversely the traffic conditions now existing in the roads in the area between the Euston and Marylebone roads in the north and the Elephant and Castle in the south, unless an adequate route with suitable connections is provided between these points. (8) Any developments on either side of the river in the vicinity of Charing Cross should be so regulated that they will not hinder the construction of a bridge or the provision of the approaches thereto.

"THE ALTERNATIVE ASPECT OF THE PROBLEM."

"It should not be overlooked," continues the L.C.C. Committees' report, "that, in spite of the weight of argument brought to bear by successive bodies in favour of a new bridge at Charing Cross, there is another point of view. We think that the Council ought at least to have before it a short statement of this view. Taking first the arguments put forward by the Advisory Committee of 1930, it is well to recall that the report of that Committee sets out at the beginning certain preliminary factors governing the investigations then made. One of these is the plain statement that it was the acceptance of the proposal to preserve Waterloo-bridge which involved the provision of further facilities for cross-river traffic at Charing Cross. The Committee add: 'Our report is based upon the assumption that the object above-mentioned (the preservation of Waterloo-bridge) still holds the field.' The rebuilding of Waterloo-bridge to take six lines of traffic has, therefore, removed the basic assumption of that report. . . . The crux of the traffic problem is to be found in the position and traffic capacity of Trafalgar-square, which is incapable of enlargement. This is already one of the heaviest traffic points in London, and although the congestion has been considerably relieved by the measures taken for the regulation of the traffic it is certain, considering the rate of growth of the traffic, to become much further congested long before a scheme for a Charing Cross-bridge can be carried out. Linked with Trafalgar-square are the conditions at several neighbouring points, particularly Piccadilly-circus and Oxford-street at Tottenham Court-road. If the new bridge is to be the great improvement suggested, it must attract fresh traffic to the neighbourhood and not only from Westminster-bridge, but from Lambeth-bridge and, to a small extent, even from Vauxhall-bridge. This is, on the face of it, undesirable. It is well to bear in mind the position if no Charing Cross-bridge be constructed."

"THE SCHEME OF THE TRAFFIC ADVISORY COMMITTEE."

"This scheme," states the L.C.C. Committees, "may be examined from two points of view—(i) general, and (ii) financial.

"General.—The diagram attached to the report of the Traffic Advisory Committee indicates a combined road and rail bridge, with a roadway 90 ft. in width and with immediate approaches extending from the Strand (junction of King William-street) to Waterloo-road (junction of York-road and Stamford-street), with a traffic circus at each of these junctions and a widening of Waterloo-road. A diversion of York-road is also indicated, and the rebuilding of two bridges under the Southern Railway is shown. The road and rail diverge at the approaches, so that, while the railway is carried on the existing viaduct south of the river and enters Charing Cross station on the north, the roadway connects with Waterloo-road and the Strand. The bridge over the river would accommodate five railway tracks, as compared with seven on the existing bridge, and the report states that the Southern Railway Company have indicated to the Committee that they would be willing to co-operate in the construction of a bridge of this kind."

The L.C.C. Committees are advised (the report states) that the scheme is practicable in an engineering sense. The construction of the new bridge might have to be carried out in stages, beginning with the widened portion on the downstream side of the present bridge. The railway tracks could be diverted temporarily over the new portion of the bridge as constructed. The present report does not deal with the type of bridge, but scheme No. 1 of the Advisory Committee of 1930 contemplated three spans over the river.

Financial. — Under this heading it is stated, that "estimates, prepared by the Council's officers, have been submitted to us of the cost of a combined road and rail bridge, in the position indicated in the diagram attached to the Traffic Advisory Committee's report, and the provision of a main arterial thoroughfare from Euston-road to the Elephant and Castle, with certain additional traffic circuses and consequential widenings of adjacent roads. These estimates are: Property and trade compensation (including re-housing £800,000), gross £25,000,000; works £4,500,000; making a total gross of £29,500,000. The total recoupment from eventual redevelopment is estimated at £2,000,000." With costs of replanning of the central area of London, a scheme such as that envisaged by the Traffic Advisory Committee could not, in the L.C.C. Committees' opinion, be realised for less than £32,500,000, and even this could not be regarded as an inclusive estimate.

CONCLUSIONS.

"In an impartial consideration of this problem, we feel," states the L.C.C. Committees' report, "that the following factors must be very carefully weighed: (i) It is common ground that an extensive scheme of improvements on both the north and the south side of the Thames is essential to any new bridge at Charing Cross. (ii) If the governing consideration be to provide a traffic route from the Euston-Marylebone-roads to the Elephant and Castle, the claims of a direct line of communication over the new Waterloo-bridge should be compared with those of a route over a new Charing Cross-bridge from the following points of view: (a) comparative cost; (b) comparative length of route; (c) comparative relief to congested areas. (iii) So far as both the general and the local traffic problems are concerned, the effect of improvements to existing bridges and their approaches recently completed, or now in hand or in contemplation, should be fully considered. (iv) The relative urgency for further cross-river communications east of Tower-bridge and for many other important highway improvements should be examined."

The report concludes by suggesting that the question arises whether the proposal of the Traffic Advisory Committee would confer benefit commensurate with its cost. The Council are recommended: "That inquiry be made of His Majesty's Government as to how an approved scheme for constructing a new bridge at Charing Cross and ancillary improvement works is to be financed and as to the priority attached by His Majesty's Government to such a proposal in relation to other major improvement schemes in London." The report is signed by Mr. G. Russell Strauss (Chairman of the Highways Committee), Mr. Charles Latham (Chairman of the Finance Committee), and Mr. H. Berry (Chairman of the Town Planning and Building Regulation Committee).

The recommendation was agreed to.

NORTHERN ARCHITECTURAL STUDENTS' CONGRESS.

The fourth Annual Congress of the Northern Architectural Students' Association is to be held in Leeds on Friday and Saturday, February 26 and 27. The Association was formed in 1932 for the furtherance of professional and social relations between the schools of architecture in the north of England and in Scotland. It started with a large membership of students, representing no fewer than eight northern schools of architecture, and has grown rapidly, so that it now includes all the students of the schools of architecture north of and including Sheffield.

The three objects of the Association are: EDUCATIONALLY to promote unity in national architectural ideals and to further the progressive study of design; SOCIALLY to disseminate new ideas, widen professional experience and provide opportunities of friendship, and PROFESSIONALLY to form a link between students and senior members of the profession.

The activities of the Association have resulted in increased friendships and free exchange of ideas among its members, but its importance is national rather than merely professional, for this society of young architects is one of the progressive forms making for the closer study of modern architectural problems, including housing, slum clearance, national and local planning and replanning.

The congress this year has been organised by the student members of the Leeds School of Architecture. They have invited as their guest of honour Sir E. Owen Williams, B.Sc., K.B.E., who will address the congress on the Friday evening. The congress will be opened by the Lord Mayor of Leeds at the City Art Gallery at 3 p.m. on Friday, February 26. At the Art Gallery there is a large exhibition of work by students of the Leeds School of Architecture.

Exhibitions of posters, photographs, work by West Yorkshire architects, and perspectives by many famous draughtsmen of work all over the country have been arranged in the Leeds School of Architecture in Woodhouse-lane. Another interesting feature is the exhibition of Leeds housing and slum clearance schemes.

THE TOWN PLANNING INSTITUTE

ADMINISTRATION OF SCHEMES PREPARED BY JOINT COMMITTEES.

MR. E. G. ALLEN (President) took the chair at a meeting of the Town Planning Institute at Caxton Hall, Westminster, on February 12, when Professor Patrick Abercrombie read a paper on "Administration of Schemes Prepared by Joint Committees."

Professor Abercrombie said the difficulty of deciding upon the best responsible authority (to administer schemes prepared by joint committees) did not arise when the scheme in question had been prepared wholly by the local authority and for its own area; the authority which was enterprising enough and wealthy enough to prepare an adequate scheme for itself should surely be capable of carrying it out. Or there was the other case where a county borough had participated in a joint scheme for its preparation with neighbouring rural districts. It was not likely that the mighty monster would want to be trammelled in its own affairs by the circumambient small fry, nor would a rural district feel called upon to contribute towards a corporation street central improvement or a vast slum clearance replanning scheme or a sublime civic centre. It might be assumed that Megalopolis would insist upon managing its own affairs. But the converse was by no means true; the rural might quite welcome a continuance of partnership, though there were other cases where a divorce appeared inevitable when the period of responsibility was reached. The problem, therefore, which they were to study was that of the authorities of large acres and small means, and there were roughly two types of case: the one just referred to of country areas which surrounded a city and were in process of greater or less suburbanisation, and the other of a country area where country towns (forming modest urban districts) and large rural areas with their focal villages constituted the basis of the scheme.

These might be described as normal cases where some sort of joint responsibility seemed called for, as a continuance of the co-operation which had gone to the making of the scheme. For he could not think that anyone could wish to see the complete disintegration into their component parts of all joint committees, with at most some shadowy advisory committees meeting occasionally and hoping that all was for the best. The real difficulties attending joint action, by the introduction of a complex unit of local government for certain purposes while the simple unit was retained for others, were in effect surmounted during the preparation stage, when the machinery for allowing interim development (even more than that for preparation) had been devised and set going on well-oiled wheels.

There were, of course, abnormal cases which called for quite special treatment, and which had, perhaps, be better considered on some future occasion; such abnormal cases occurred when some national element entered in, requiring action or finance which even a combination of the local authorities concerned could not furnish.

The Metropolitan Area.

The Metropolitan area of London was so complicated and its component local authorities so numerous that no representative combination that would function could be devised; it was true that for preparatory purposes a joint committee consisting of the City, the L.C.C., the external County Councils and County Boroughs had been suggested. Such a committee would leave without effective statutory representation all the municipal urban and rural authorities which, in a Metropolitan area, were definitely "planning conscious." But for the administration of a scheme local dissolution would be essential. The alternative was to go to the other extreme and appoint a small non-representative commission both to prepare and administer an outline scheme, leaving local details to be filled in by individual authorities, which would range from the City and L.C.C. to the outermost rural district. The impulse behind the splendid gesture of the L.C.C. in voting two millions towards an outer green belt would then be methodised into a regular channel for providing the necessary finance for metropolitan, as compared with local, requirements.

National parks, again, could not be adequately administered, even though several counties combined together for the purpose. Wild country was nearly always situated in poor districts, and the nation would not be satisfied with "poor" schemes. The National Parks Report recommended not only a national grant for such schemes but a National Co-ordinating Committee, and as an inevitable result something more than the group of local authorities territorially concerned, for purposes of administration. Even the maximum use of co-option could not secure this end.

Finally, there were the special areas, where planning and construction works must march together—not one put in charge of the conduct of the other.

He was not prepared to say what new legislation was required for these three abnormal cases—Metropolitan, National Parks and Special Area planning; they would therefore return to the normal examples and first consider what the Act itself provided for their use. The relevant passages were found in the second and third sub-section of Section 11. These two sub-sections had always appeared to him to be among the best features of the Act, allowing as they did for a very great degree of comprehensiveness and flexibility. Sub-section 2 was again subdivided to specify (a) three different types of authority for all purposes of the scheme, (b) different purposes of the scheme or different parts of the area of the scheme for which authorities may be made responsible.

There was thus, in the first place, the case where it was desired to have a responsible authority for all purposes of the scheme, and in the second case, where it was decided to split up the scheme either vertically according to its contents or purposes, or horizontally according to its area. In this case there must, of course, be more than one responsible authority, but there was a curious proviso (which might prove awkward) that where this sub-division of the scheme took place there must be a minimum of two responsible authorities for each division.

The three types of authority for all purposes of a scheme were quite simply stated: (i) the local authority in whose district the land to which the scheme applies was situated; (ii) a county council; (iii) a joint body specially set up by the scheme. There was a tag to the first of these which had given some of his legal friends some trouble; as a further description of the local authority which might be made responsible for a scheme within its own boundary, there were added the words, "or any neighbouring land"; this could not apply to neighbouring land in an adjoining district, but within the same authorities' area, though not happening to form part of the scheme.

The third sub-section was devoted to elucidating and elaborating the possible joint body which might be set up either for all purposes of the scheme or for different purposes or areas of the scheme. It enacted that the clauses of the scheme must clearly define (i) the constitution and incorporation of the joint body; (ii) the powers and duties conferred upon them; and (iii) the manner in which they might borrow money and defray their expenses.

Finally, the power of co-option of non-members of constituent authorities which was granted to preparatory joint committees under Section 3 was continued for the responsible authority under similar limitation as to proportion of numbers.

It must be agreed that in these two sub-sections there was ample provision made for—nay even a suggested bias towards—the creation of a joint body (henceforth to be called a joint board) for schemes which had been prepared by joint committees. Of course, the joint board might not be precisely the same as the joint committee, seeing that the administration and enforcing of a scheme was a different business to that of preparation. He had already hinted that where a large county borough had participated in and probably been the originating force in a joint committee for preparation, it would almost certainly wish to administer its own area, but there was nothing in the section of the Act to prevent its forming one of the joint board for the surrounding scheme, and it was only by this means that it could systematically, methodically and equitably participate in the financial obligations of the joint scheme. Perhaps the most vexed question in such a case was whether the county council should also participate; could the family of urban and rural districts support the presence of two large and wealthy uncles, the county borough, the county council?

Joint Boards.

In the simpler cases where there was no county borough he was still in favour of the joint board including the county council, rather than the county council acting alone, with the county districts only vocal through an advisory committee. In one case with which he had been connected the county districts relinquished their powers to the county council for the preparation of the scheme; the latter were nevertheless proposing a joint board for the administration. This was perhaps the strongest evidence that could be brought in favour of joint action for this stage, for the county after having prepared the scheme might well make out a case for sole administration.

The Model Clause (4) issued by the Minister was designed for a non-county borough or a district council being the single responsible authority, with the exception of roads vested in the county council or proposed roads for which the county council had proposed to be responsible. The only further question arose as to whether the powers concerning these roads had been delegated to the borough or district council or not. Alternative clauses were provided to meet the case. The simplicity of the whole proceeding was evident from the fact that this Clause 4 (in whichever form) with its six

sub-clauses occupied rather less than one page.

Where it was proposed to set up a joint board the matter was not so simple; in addition to the clause describing for what purposes or areas of the scheme the responsible authorities should act, there must be a schedule setting forth the constitution, functions and finance of the joint board; a good deal more letterpress was required for the purpose.

The case which he was taking was that where no county borough was involved; the position was therefore similar to that of the Minister's Model Clause (4), in that the county council was made responsible authority for certain matters—e.g., roads, petrol filling stations and advertisements, and the joint board for the general purposes of the scheme. Under roads, it must be settled whether the county council acted for all roads or whether the district councils or joint board should be responsible for estate roads constructed by owners.

The lecturer then presented a schedule, which he said was offered for the purpose of discussion and criticism. The first schedule dealt with the constitution, functions and expenses of a joint planning board. The joint board should consist of 25 members appointed by the constituent authorities from among their own members, with power to co-opt certain additional members. Section 4 dealt with the appointment and tenure of office of members, and Sections 8 and 9 with regard to the procedure for calling and the holding of meetings and the appointment of committees. Section 10 referred to the appointment of officers and required the joint board to appoint a clerk, a treasurer and a planning officer amongst others. Section 12 was "for the purposes and subject to the provisions of the scheme the Joint Board shall be deemed to be a local authority within the meaning of the Act as if it were the Council of a County District and, subject as aforesaid, anything which under the Act or Regulations is required or authorised to be done by, to, or in respect of a local authority shall or may be done by, to or in respect of the Joint Board and the provisions of the Act and Regulations relating to local authorities shall apply to the Joint Board. Provided that the Joint Board shall not have power to raise a rate, or to borrow money save as specified in 14 (2)."

Section 13, which dealt with expenses, provided amongst other things that the special expenses of the Joint Board should be defrayed by the council of the county district within whose area the building or land in respect of which compensation was payable, or the land to be acquired, was situate, and no special expenses should be incurred by the board without the consent of the council of the district responsible. Section 14 provided for the manner in which the Joint Board should furnish the constituent authorities with an estimate of the sums likely to be required over a certain period for compensation, purchase of land, etc. Under Section 19 it was provided that an appeal to the Minister should lie for the determination of any difference, and Section 20 provided for the provisions of the schedule remaining in force for 10 years.

Continuing, Professor Abercrombie said that such then were some of the complicated arrangements which must be made if a new type of local authority, which was what a joint planning board amounted to, had to be created. It must not be assumed that the schedule was intended to represent a fixed type; as was inevitable in English local government, there must be much local variation to suit special circumstances. He attached great importance to the power of making the joint board responsible for certain features, such as open spaces, which, though occurring in one district, had nevertheless a regional importance. The participation of the county borough in a county district scheme was essential in many cases for securing for urban needs amenities situated in a country area.

To conclude, it would be quite possible, and doubtless very logical, to recommend the following alternatives: (i) That the whole of the planning schemes of the country should be administered and enforced as responsible authorities by (a) county boroughs, (b) county councils, all other local authorities having an opportunity of expressing their views by means of advisory committees only. (ii) That the whole of the planning schemes of the country should be administered and enforced by each local authority in whose area the scheme (or portion of a jointly prepared scheme) lay, the county council in non-county borough areas being responsible for main roads other than those taken over by the Minister of Transport.

In place of those two extremes there was the intermediate and he ventured to suggest more characteristically English method of setting up joint boards which might vary to suit local requirements: in one case county boroughs might combine with county districts and county boroughs, in another more than one county council could co-operate with county districts; again, a whole county, its rural and district councils might administer a single scheme; or again, a county might be divided for convenience into several schemes, the county council participating in each and thus securing a common policy of administration and enforcement.

Vote of Thanks and Discussion.

Mr. L. Edgar Stephens (Clerk to the Warwickshire County Council), in proposing a vote of thanks to the author, said it was no use representatives from a number of local authorities taking the trouble to prepare schemes for a comprehensive area, if immediately the schemes were made they were thrown back to individual local authorities for them to administer in their own particular way regardless of what was being done on their very doorstep. He agreed entirely with the author's ideals, but not necessarily with the means he advocated for attaining them. In the case of Warwickshire, Section 11 of the Act did not cover what they wanted, and they were preparing to set up an administrative joint committee under Section 91 of the Local Government Act of 1933. Many county councils and borough councils had a dislike to precepting bodies, and that was one of the reasons why the Warwickshire County Council were not prepared to divest themselves of their powers and delegate them to another autonomous body. But they felt strongly that some form of joint committee must be appointed to carry on the good work which the four executive committees had already performed in preparation.

Mr. W. Dobson Chapman (Cheshire), in seconding the motion, said that as one engaged on the technical work involved in the preparation of six large regional planning schemes covering some 600 square miles, he looked with some concern at the future of these schemes when finally approved. He had spent much time endeavouring to work out the most satisfactory way of administering joint schemes, and had been bound to arrive at the conclusion that whilst in theory uniformity in administration on all matters by one body was the ideal, yet he could not see how a joint board could work satisfactorily as a statutory responsible authority in respect of those provisions of the scheme which involved compensation or any appreciable financial obligations. The proposals of a planning scheme involving financial obligations were so extensive and varied in character that to invest all of such powers in a joint board was almost equivalent to taking away a large percentage of the powers hitherto invested in a local authority which had been appointed by the electorate to administer the provisions. He personally felt that matters the administration of which a joint board could perform more satisfactorily than a local authority were those provisions which did not actually involve compensation or any other financial obligations, and no serious harm could result if a joint board constituted on the lines set out by Professor Abercrombie could be put into operation for the exercise of these powers only.

Mr. G. L. Pepler said there was provision for a joint board in a scheme for a part of East Suffolk now before the Ministry. Mr. Chapman suggested taking away from the smaller authorities all that part of a scheme which did not involve compensation and let them carry on with things which involved paying money away. That seemed a little hard. He asked them to think of the point of view of what might be called the smaller authorities.

Mr. E. G. Culpin said the proposals cut right across the principles of local government. Planning in the future would be largely in the rural districts, and rural councils would have a lot to do with it. A regional committee was the proper way to prepare a scheme, but administration was entirely different.

Mr. A. Safford stressed the importance of retaining the good will of landowners if planning was to be successful. Already they had to go to different authorities for consents under various Acts, and the setting up of a joint board would add another authority.

Mr. G. Montagu Harris asked what was to happen where a county borough prepared a scheme of its own area and for an area adjoining. Was it suggested that the county borough should be allowed to administer the scheme within its own area without allowing anyone else to have a word to say, and at the same time have the power of assisting to administer the surrounding area? If so, what would the county council and rural authority have to say?

Mr. W. Harding Thompson said the chief argument in favour of a joint board was to deal with land in a bigger way than could be done in the present local government units. He pointed out the competition which would arise on the release of temporarily restricted land unless this was carried out by a comprehensive body such as a joint board.

The President expressed his view as to the skill required in the administration of a scheme and the need for the employment of technical advisers.

Professor Abercrombie, in reply, said the proposer and seconder of the vote of thanks both expressed agreement with joint boards, but cut out the financial part. He was unrepentant, because unless it had some finance behind it, a joint board could not carry out its principal objects.

HEATING AND VENTILATING EQUIPMENT OF BUILDINGS

PAPER BEFORE THE SHEFFIELD AND SOUTH YORKSHIRE SOCIETY OF ARCHITECTS.

A LECTURE on "Heating and Ventilating Equipment of Buildings" was given by Mr. F. B. Turpin, M.I.H.V.E., before the Sheffield, South Yorkshire and District Society of Architects and Surveyors, at the University, Western Bank, Sheffield, on February 12. The President, Mr. J. Amory Teather, F.R.I.B.A., occupied the chair.

The lecturer said that nowadays a heating system was considered unsatisfactory unless it provided an adequate and equable temperature throughout the entire building, and the radiators must harmonise with the surrounding styles of decoration. The sedentary form of life we now led had made us more sensitive to conditions of comfort, and we also became more critical of the appearance of the apparatus.

The important factors in the performance of a heating and ventilating system were those of temperature and ventilation, combined with running costs; a further item that required attention was that of humidity, since it was of importance in connection with certain classes of building.

A description of the cause for the variation in relative humidity might be helpful towards a fuller appreciation of atmospheric conditions. For instance, the effect of low relative humidity might have been experienced in Swiss winter sports hotels in the evening, when the outside temperature had been zero Fahrenheit, and the air saturated with moisture, which, after having entered the building, was raised in temperature to about 75 deg. Fahrenheit, and its relative humidity, which was originally 100 per cent. (saturated) became as low as 5 per cent. This produced conditions which could, fortunately, be partially relieved by the consumption of liquid refreshment.

With regard to temperature and air change, the following figures had been found in practice to provide satisfactory conditions of comfort:—

Type of Building.	Recommended internal temperature Deg. F.	Air change per hour.
Residence and flats—		
Living-room ...	62–65	1–2
Bedrooms	53	1–2
Entrance halls ...	60	3
Staircases and corridors ...	60	2
Factories	55	1–1½
Churches	55	¾
Schools	62	4
Hospitals—		
Wards	65	2–3
Operating rooms ...	80	2
Storerooms and warehouses	50	½–1

The above figures were based on an external temperature of 32 deg. F. and natural conditions of ventilation.

The question of relative humidity concerned those buildings used for the production and storage of certain classes of goods, such as cotton, tobacco, printing, etc., and might vary from 30 to 80 per cent. It was also of importance in cinemas, where, owing to the large concentration of people, some provision had to be made to reduce the percentage of humidity, which became excessive due to the large quantity of moisture given off by the audience.

Heat Output.

The running costs of a heating and ventilating system depended upon the class of fuel and appliance used, the control of the heat output from the apparatus, and the type of material used in the building structure. The heat output from an installation might be conserved by providing for a normal vertical temperature gradient of the air in the room heated (this gradient being defined as the difference in temperature of the air at high and low levels in the room). It would be appreciated that if the air at high level was 10 degrees higher than required for comfort at breathing level, the heat represented by this excess temperature was serving no useful purpose. The most satisfactory gradient was assured by arranging the heating surface in the floor or ceiling in the form of a radiant panel. Hot-water pipes fixed at high level (as in factories), and steam radiators did not produce desirable temperature gradients.

The heat output must be controlled in accordance with the prevailing outside temperature, since an apparatus was usually designed in this country to meet the maximum average external temperature of about 32 deg. F., which meant that normally the system was working at about 60 per cent. of its maximum output. The importance of proper control of the output was realised when it was known that each degree maintained above an internal temperature of 63 deg. F. represented approximately five per cent. wastage in the bill of fuel.

The heat output might be controlled manually or automatically at the boiler by the regulation of the boiler temperature, the latter control being effected by a boiler or room thermostat, and might be supplemented by the localised control of the heat emitted from the radiators, by the use of a room thermostat actuating a stop valve on the radiator circuit. Automatic means were to be preferred, as they ensured a much more accurate degree of control, which justified the extra expense incurred by this method.

Much could be done to conserve heat by the class and arrangements of material used in the construction of the building, as would be seen from the following comparisons, which showed the saving that could be effected in the amount of heat transmitted through various types of construction.

The introduction of a two-inch air space in a brick wall would reduce the heat transmission coefficient from 0.33 to 0.25, a reduction of 24 per cent. Three-quarter inch timber panelling in a 13½-in. brick wall would reduce the transmission from 0.28 to 0.18, a saving of 36 per cent. Permanent insulation shuttering on a 5-in. concrete wall reduced the transmission of 0.83 to 0.35, a saving of 57 per cent. Timber used as a flooring in a roof space would effect a saving of 33 per cent. A roof covered with washed shingle about 4 in. in depth, also provided very good insulation.

An office building of approximately half a million cubic feet capacity, with 6 in. concrete walls and roof insulated with 1-in. thick cork slabs, would effect a saving in the fuel consumption of about £65 per annum, and the extra outlay to cover the cost of insulation would be repaid in just over two years.

Heating Apparatus.

The heating of a building from a centralised source of heat supply might be carried out by warming the air direct by this fuel-burning appliance itself, or indirectly by the use of water and steam. The first method was, of course, the simpler and cheaper to instal, and might take the form of a slow-combustion stove fixed in a central position in the building, such as the entrance hall of a house. Heating on a larger scale with this method might also be done by the hot air pipeless system, by means of a heater fixed in the basement of a building, which circulated hot air through gratings in the ground floor. With these two methods, however, it was not possible to guarantee a definite temperature throughout the building.

The use of hot water circulated through pipes to radiators was still the foremost method employed in the majority of buildings centrally heated, owing to its simplicity of operation. Steam was used principally in the larger industrial type of building, where it was generally required for process work in addition to space heating; it might also be used to advantage in large residential and office buildings on the vacuum system, which enabled the temperature of the steam to be regulated to that used in hot-water heating. Both hot water and steam might be used to heat air for circulation through the building by a fan and air ducting.

The lecturer then described recent improvements in central heating apparatus, referring particularly to the radiant panel, and dealt also with hot water supply.

Ventilating Apparatus.

Continuing, the lecturer said the simplest form of ventilation was provided by means of fresh air being admitted into the building through openings in the external wall behind the radiators, an arrangement which had proved satisfactory for the residential class of building. With this method it was necessary to arrange for the control of the admission of air by means of regulators fitted to the opening. It was also necessary to fix baffle plates to the radiator to deflect the incoming air currents to an upward direction, so that it might be adequately warmed.

Mechanical ventilation might be provided by the plenum system, which delivered warmed and filtered air into the building by means of a fan and air ducting, and was usually employed for heating factory buildings, as the air contained sufficient heat to counteract that lost through the building structure.

The type of system now generally used in large public buildings was a combination of fresh air supply and extraction by the use of fans connected to ducting, which was concealed in false ceilings, beam and stanchion casings. This system was sometimes arranged to provide all the heating necessary to warm the building, or might be combined with a radiator or panel heating installation, in which case it provided the heat necessary for ventilation only.

The combined fresh air supply and extraction system was sometimes referred to as the balanced system, although, strictly speaking, the quantity of fresh air supplied was in excess of that extracted, so that a positive pressure of air existed in the building, which prevented the infiltration of cold air through the window and door crevices and prevented draughts.

The air was generally delivered into the rooms and extracted through grilles in

the ducting located at high level, the inlet velocity of the air not exceeding two to three hundred feet per minute.

With the combined system for ordinary ventilation, the fresh air was drawn by a fan through the main intake opening, which was provided with a filter, and was passed through a heater before passing into the distributing ducting. With air conditioning, the air passed through a washer, the water temperature of which was automatically varied according to the dew point temperature of the air required to give the correct relative humidity, which entailed the use of refrigeration during the summer time for cooling the spray water. Under these conditions a large proportion of the air might be recirculated in order to reduce the running costs.

A further advantage of the air-conditioning system was that it was not necessary for ventilation to open the windows, which might be double-glazed so that traffic noises might be excluded, and in the event of aerial gas attacks the air inside the building was free from vitiation.

A self-containing air-conditioning unit might be used instead of the centralised system when it was only required to condition one or two rooms in a building, or each flat independently in a block of flats. The compressor, cooling coils and air-circulating fan were all contained in a cabinet which was attractively finished.

Mention must be made of the unit heater system of heating, with which ventilation might be provided. The unit consisted of a form of radiator behind which was fixed a fan which forced air through the radiator. These units were usually suspended from the ceiling, and when connected by an air duct to the outside of the building, might be used to change the air in the space heated during both winter and summer time.

Boiler Plant.

The type of boiler plants to be used would depend upon the class of fuel handled, the labour available for attention to the plant, site conditions and capital outlay, etc., and information of this nature must first be obtained before recommendations could be made.

The electrical equipment comprised an electrical boiler supplying heat to a thermal storage cylinder, or the heat might be supplied by immersion heaters in the cylinder itself. With this system, electricity was consumed during the period of "off peak" load of the generating station plant, when a special low rate was charged for supply.

The coke magazine boiler, also known as the gravity feed boiler, was constructed to store sufficient fuel for about twelve hours' firing, which gravitated to the fire-box and maintained the correct rate of combustion according to the regulation of the air dampers, which were thermostatically controlled. With this type of boiler, fuel handling was simplified if stored above the boilers, usually at ground level, so that it might be shovelled direct into the fuel hopper.

Having dealt with automatic and mechanical stoking, the lecturer said, in conclusion, he would like to stress the importance of providing a suitable flue for the boiler plant, as proper combustion depended upon the provision of adequate draught. Careful consideration should be given to the question of area and height, and the termination of the stack relative to adjacent buildings. If a terminal fitting was to be used, it should be of similar size to the stack, and not smaller, as was usually found to be the case.

ARCHITECTURAL CONFERENCE ON LIGHTING

SOME PROBLEMS AND THEIR SOLUTION

THE second of this season's series of Conferences on Lighting for Architects was held at the E.L.M.A. Lighting Service Bureau on Wednesday, February 3. The speakers were Mr. T. P. Bennett, F.R.I.B.A., Mr. R. H. Uren, A.R.I.B.A., Mrs. Richard Acland, and Mr. R. O. Sutherland, A.R.I.B.A.

Mr. T. P. Bennett quoted recent experiences of lighting schemes he had carried out for Messrs. Holdron, of Peckham, and Messrs. John Barnes and Company, of Finchley Road, both of which are large departmental stores designed on modern lines. By lantern slides he demonstrated the effectiveness of the schemes installed in these shops, and pointed out defects which had appeared in actual practice, which, he said, would be overcome in future installations of this kind. In connection with high wattage installations, he called the attention of the audience to the ventilation problem, and suggested that it was a serious problem in the case of shop windows containing foodstuffs. There had been cases in which perishable goods had turned bad. Referring to the window lighting of Messrs. Barnes' premises, the speaker said that he was completely satisfied with this, and thought it among the best installations of its type in London, for the lighting was brilliant, the wattage was not excessive, and local "spotting" was amply provided, so that harsh shadows by brilliant top lighting could be avoided.

Mr. R. H. Uren followed with an account, also illustrated by lantern slides, of the lighting of the large hall at the Hornsey Town Hall, a room which is used for dancing, public meetings, films, etc. He drew attention to the arrangement of fittings at the side of the hall, and the laylight lighting down the centre, and said that the lighting had been designed not only from the point of view of the audience, but also so that it might cause the least discomfort to anyone speaking from the platform. Speaking of the difficulties in maintaining a laylight installation, he quoted as an example the Sheffield City Hall, where a travelling cradle in the roof was used to facilitate cleaning. He regarded this as being highly ingenious and useful, and a method which could be adopted with advantage wherever space allowed.

Mrs. Richard Acland, who won the competition arranged by the Bond-street Association and the Architectural Association for Coronation decorations for Bond-street, then gave a brief account of the scheme she has designed, and exhibited a scale model of the street. In carrying out such a scheme, she said, there were two problems to consider—namely, dignity and gaiety—and, to make it all the more difficult, they were largely inconsistent with each other. Referring to the architecture of Bond-street, she said that it was of such a nature that a decision had to be made in any such scheme as that for which she had been responsible whether completely to hide it with decorations or to bring it into the scheme; she had decided to pretend that the architecture was not there. After describing the actual decorations, which consisted of white banners hanging vertically from wires stretched across the road, she showed how the lighting of this will be done by using one floodlighting fitting to each two banners.

Mr. R. O. Sutherland, Architect to the E.L.M.A. Lighting Service Bureau, put before the audience plans of the new Architectural Studio which will include cornice and other varieties of lighting. He was endeavouring to provide a room which would contain a multitude of new lighting ideas, so that architects and interior decorators visiting the Bureau would be able to find ideas of the most up-to-date type for inclusion in their own schemes. He remarked that the enormous development promised in connection with electric discharge lamps and the prospect of getting three times as much light for the same consumption of electricity, indicated that indirect lighting systems would present a far more economical proposition in architecture. The majority of people liked this method of lighting, but in most cases it was ruled out because of the cost. He also pointed out that the use of fluorescent materials would play an important part in this room. Here, again, was a new development which held out endless possibilities in the future.

Discussion.

During the discussion, Mr. Bennett's remarks with regard to lighted showcases and windows in which foodstuffs had become damaged through heat created considerable comment. It was suggested that in such circumstances a small refrigerator should be installed behind or under the windows or showcases and some of the pipes run along the windows. This was quoted as having been done in Sweden and also in a store at Kingston, in the latter instance the showcases being connected permanently to a refrigerator.

Another example of the heat and ventilation problem which Mr. Bennett considered of the greatest importance was mentioned in connection with a large store in America. In this case the counters were intensively lighted by means of louvre lighting with high-efficiency reflectors. The ceilings were 25 ft. from the floor and the counters 3 ft. 6 in. high, the lighting intensity throughout the whole of this one floor being 65 foot candles and 100 foot candles on the main counters. The heat generated by the lighting was eight times the heat required for the particular floor in which the system of lighting was installed, the floor having an area of 15,000 square feet. Arrangements had been made to have the heated air extracted by a fan, cleaned and circulated to the other floors in the building. The lighting was charged for at a tariff very much in excess of the average in London, but in spite of this it paid handsomely, because something like £4,000 had been saved on heating equipment which otherwise would have been necessary. Such installations, however, called for the closest co-operation between the architect and the engineer.

Replying to a query as to whether individual traders in Bond-street would be permitted to instal their own decorations on their shopfronts. Mrs. Acland said she was hoping that her scheme would be enough to dominate, but she had designed it in such a way that should any individual wish to exercise his ingenuity, it would not in any way interfere with the general appearance. In closing the session Mr. W. J. Jones called attention to the Electrical Illumination Exhibition at the Science Museum.

"EXTRAS"—VIII

By W. T. CRESWELL, K.C., Hon.A.R.I.B.A., A.S.I., etc., assisted by NORMAN P. GREIG, B.A., Barrister-at-Law.

WHEN it can be shown that there is a new contract made in respect to alterations and additions, then the stipulations as to "extras," and the manner in which they are to be paid for, are no longer applicable, and the alterations and additions must be measured and valued and paid for on a *quantum meruit* basis, that is, for as much as they are worth.

Most building contracts provide for certain works being carried out by sub-contractors. The sub-contractor is not necessarily a party to the main contract between the employer and the contractor, though there is a tendency in up-to-date contracts for him to be so made. For instance, the 1931 Form of Building Contract provides that the sub-contractor shall indemnify the general contractor against the same obligations in respect of the sub-contractor as the general contractor is liable for under the main contract. This is a very necessary provision in that the general contractor takes upon himself under the main contract the responsibility for the sub-contractor carrying out his obligations.

This Form of Contract also provides for the architect having power to nominate sub-contractors as specialists; but, in general, and in this contract in particular, there is no privity of contract between the employer and the sub-contractor, and the sub-contractor or specialist must look to the general contractor for payment.

In Hampton *v.* Glamorgan C.C. (1917) A.C.13, the Council's architect wrote to the general contractor requesting him to accept the sub-contractor's estimate for heating apparatus, and the contractor wrote to the sub-contractor stating that the latter's scheme had been approved, and asked for details. The sub-contractor, in reply, thanked the contractor for accepting the estimates and proceeded with the work. When the architect refused to certify payment to the sub-contractor the general contractor paid, but was unable to pay the final balance. The sub-contractor therefore sued the employer (the Council). It was held that there was no contract between the sub-contractor and the employer, but only between the sub-contractor and the general contractor, and the action consequently failed.

Even when the employer has himself accepted the sub-contractor's work, it makes no difference to the principle above enunciated, and it is only when the general contractor unduly delays payment to the sub-contractor, as, for example, by presenting his petition in bankruptcy, that the employer may be justified in paying the sub-contractor direct. He is under no obligation to do so.

Should the employer order the sub-contractor to do additional work involving "extras," then he must pay the sub-contractor for that work directly. But the sub-contractor is obliged to prove that the additional work ordered is additional to the work comprised in his contract with the general contractor, and that it is not included in the main contract. Also he must prove a new and distinct contract with the employer for the said "extras."

R.I.B.A. Dramatic Society.

The first lecture arranged for this year by the R.I.B.A. Dramatic Society will be given at the R.I.B.A. on Friday, March 19, at 8.30, by Mr. W. S. Kennedy, chairman of the Incorporated Stage Society. Mr. Kennedy's subject will be "Illusion in the Theatre," and the lecture will be free.

LAW REPORT

KING'S BENCH DIVISION.

Before MR. JUSTICE DU PARCQ.

CLAIM BY SUB-CONTRACTORS AGAINST CONTRACTORS FOR WORK DONE.

Permanent Bronzing and Restoring Syndicate, Ltd., v. Hickman (1928), Ltd.

This was an action by the Permanent Bronzing and Restoring Syndicate, Ltd., of 144, St. John-street, London, E.C., to recover from the defendants, Messrs. Hickman (1928), Ltd., shopfitters, contractors and decorators, of 109, Great Russell-street, W.C., £98 8s. for work done and materials supplied.

The defendants denied liability and counterclaimed for £50 damages for alleged breach of contract.

His lordship, in the course of giving judgment, said it was an action in which the plaintiffs claimed the sum of £98 8s. from the defendants for work done and materials supplied. The plaintiffs carried on the business of decorating in the sense that their principal work was the bronzing of material so that, as in the present case, they gave the appearance of finished bronze to a metal. Defendants, amongst other things, were makers of shop-fronts, and at the material time were making a shop-front for the "Fifty Shilling Tailors" at Huddersfield. The plaintiffs were sub-contractors, and their duty was to carry out their contract, the terms of which were contained in an estimate of February 10, 1936. The plaintiffs undertook the thorough cleaning back to basic metal, bronzing to tonation as desired, and applying two transparent sealing coats to outside metal work to two frontages at the shop in question.

The plaintiffs sent a foreman and another man to do the work. The work was done, and the plaintiffs said they were entitled to be paid for it, and that they had done the work which they agreed to do. The defendants, on the contrary, said that the work which the plaintiffs did was so badly done that it had to be done again, and therefore that they (defendants) ought not to pay anything for what was done, but, on the contrary, that they ought to receive from the plaintiffs something like £50, of which they were out of pocket because the work had to be done quickly and they had had to employ other people to do it and to pay them more than they would have had to pay if there had not been urgency in the matter. In fact, before the work was quite finished the plaintiffs were told that they must not go on with it, and they were not permitted to finish it. The claim was not one for damages on the ground that plaintiffs could have finished the work, but were not permitted to complete it. The claim, therefore, remained a claim for £98 8s. for work done and materials supplied. If it were true to say that the work was so badly done that one could not expect the person who had ordered it to put up with it, he was not bound to pay anything for it at all, and was entitled to do it over again, and if he were out of pocket in so doing he could recover damages from the person who should have done the work properly. In any view of the case there would have to be some deduction made from the plaintiffs' claim. The evidence given was that it would have taken something like seven hours to complete this work, and he (the judge) could not consider this case on the footing that the plaintiffs were prevented from finishing the work, because they had not pleaded it. Therefore, he must look at the work as it was found when plaintiffs had, as he must assume, finished it on April 18. He was satisfied, having listened to the evidence, that the work as it was left on April 18 did exhibit very grave defects, and that the defendants were quite entitled to say that they would not pay for it and would not allow the shop-front for which they were responsible under their contract to be handed over in that condition to the person engaging them. About some of the facts there was really no doubt that the plaintiffs' workmen did not succeed in getting the colour right according to the original sample. There was no reason why they should not have if the workmen had been skilful enough, because he accepted the evidence which he had heard that the colour had now been obtained by Messrs. Fox, who, in fact, did produce the original sample to which the plaintiffs were to work. He (the judge) was not satisfied that anybody had agreed that over the whole of this shop-front the colour should be different from the original sample. As matters proceeded he felt bound to come to the conclusion that there were many defects, and it was no excuse at all on that contract that plaintiffs could not get the right colour or the right evenness of shade because of the metal having file marks upon it. If plaintiffs were unable to produce the stipulated result on that surface they ought to have protected themselves in their contract. He thought it was clear that anybody who had the knowledge and took the trouble could get rid of the marks and produce the result required by the contract. Then he was satisfied that there was serious running of the pigment, and, finally, that when it ought to have been perfectly firmly set, it was actually flaking off. For these reasons he thought that the defendants were entitled to take the course they did in refusing to pay, and there must be judgment for the defendants on the claim with costs.

With regard to the counterclaim, it seemed right to say that the defendants had to get the work done quickly; that the plaintiffs had agreed to finish the work by a stipulated date, and that consequently the work was late, and that it became necessary for the defendants to pay more to get it done than if there had been no hurry. The defendants claimed on that head £50, but he proposed to reduce the £50 claim to £30. He accordingly gave judgment for £30, with costs.

Mr. Alan Bell appeared for the plaintiffs, and Mr. P. G. Sandlands, K.C., and Mr. Cyril Salmon for the defendants.

NEW HOMES EXHIBITION

A LUNCHEON was held last week at the Dorchester Hotel, prior to the opening of a New Homes Exhibition (show houses at Mount Royal, Oxford-street, W.) by Sir Kingsley Wood, the Minister of Health. Mr. Ewart G. Culpin, speaking at the luncheon, said Messrs. Laing had called to their assistance the best professional aid for their houses and lay-outs of their estates. The houses were well planned, and their elevations possessed charm; they were put up to last, and when seen it would be found that the firm had done good work for the people of London. In addition, the houses were a credit to the building trade.

Mr. George Hicks said Messrs. Laing had succeeded in improving the standard of house-building.

Mr. J. W. Laing said although they had large building contracts in hand, including a hospital, several aerodromes, factories and office blocks, aggregating a value of £2,000,000, they nevertheless considered that the building of houses for sale for the middle class and the artisan of our country was the most responsible building work in which any could engage. In order to encourage people to become house-owners and to make the purchase of a house as easy and pleasant as possible, they had arranged a permanent New Homes Exhibition at 520, Oxford-street. Besides photographs, there were three actual brick-built houses, beautifully decorated and furnished complete. These houses varied in cost from £600 to £1,200 approximately. Every house built complied with the specification approved by the National House Builders' Registration Council.

Sir Kingsley Wood referred to the considerable work of Messrs. John Laing and Co. in connection with housing. They had, he said, not only built houses for owner-occupiers, but were engaged in erecting houses to let suitable for the lower-paid workers of the country.

INQUIRY BUREAU

QUESTIONS.

New By-laws and Buildings in Construction.

SIR,—I live in a locality in which building by-laws came into force on January 1. Certain erections have been built which do not conform to these by-laws. The buildings are sectional wood buildings, erected on wood sectional flooring, this flooring being carried on brick piers. The brick piers were erected prior to January 1. It is contended that the erection of the brick piers constituted the commencement of the buildings and that therefore the sectional buildings erected on these piers are exempt from the conditions of the by-laws. I shall be glad of any information on this point. H. E.

[If the piers were erected before the by-laws came into force then the contention that they constituted the commencement of the buildings, and that the sectional buildings are exempt, is right. The question arises, however, whether the Public Health Acts, Amendment Act, 1907, was in force in the district at the time the piers were erected, for by Section 27 thereof permission for temporary buildings such as have been erected had first to be obtained or they might be pulled down by the local authority if that were not done. —ED.]

Emission of Black Fluid from Boiler.

SIR,—I have received a complaint from a purchaser regarding a boiler which I have fitted in her house. The trouble is a black, treacle-like fluid which comes from the soot door, joints in the flue pipe and also from the top of the boiler itself, from the joint. The flue, which is in brick, is built on an outside wall in which the soot door is placed. A 4-ft. length of 4-in. enamelled flue pipe joins the boiler to the flue, with a square bend at the top. Have you any suggestions as to the cause of this trouble, or any remedy that I may try? I have tried a good few, but none have been successful in stopping this fluid. W. W. D.

Woodworm in Interior Partitions.

SIR,—I need a material of some description to destroy woodworm in interior partitions that are covered with canvas and papered with delicate white paper. I would appreciate, if obtainable, the name of a book or pamphlet on this pest. I have hitherto used creosote, but you will understand that I hope to destroy the woodworm only and not the decorations. W. H.

Sub-Contractor or Pieceworker? : Liability for Wages: Claims for Old Bricks.

SIR,—Your opinions on the following questions would be appreciated :—

(*a*) Is a person who gives a price for brickwork (labour only) a sub-contractor or pieceworker according to law?

(*b*) If sufficient money is not paid, or, rather, no money is paid, on the usual pay-day (Friday), insufficient progress being alleged, the builder having told the men to go to work, can the men claim wages from the builder?

(*c*) If agreement states that Flettons or other similar bricks shall be used, does it mean new bricks, or could old bricks be employed? Would one expect all second-hand bricks in £1,100-£1,200 houses? Is a claim for using old bricks just and fair in spite of agreement? S. F. A.

[The answers are : (*a*) He is a sub-contractor. (*b*) Men must claim wages from him who employs them; in this case, it appears to be the sub-contractor. (*c*) " Flettons or other similar bricks " do not include second-hand or old bricks of any kind whatsoever. Certainly one could not expect old bricks in the houses referred to, and a claim for using old bricks would be unfair.—ED.]

Soundproofing a Machine-room.

SIR,—Your advice as to the best method of soundproofing a machine-room which is next to our office would be appreciated. Can you recommend an effective material for lining walls? Would laying a composition floor help matters? B. C.

ANSWERS.

Thatch Roofs and Incombustibility.

[ANSWER TO J. A. H., FEBRUARY 12.]

SIR,—I have read with interest the question of J. A. H., and the replies given to it. I have had the same experience with our local authorities regarding a thatched cottage that I built for myself in a seaside town. To me it has always seemed a question between " incombustibility " and " fire-resistance," asbestos being the only fireproof material known. It must be remembered that thatched cottages that catch fire are generally of straw and are near a railway line. Fires generally originate from the interior of a house, such as by an overturned lamp. This may set alight the combustible roof timbers, which would set fire to the thatch from the underside. In my case I lined the underside of the rafters with asbestos sheeting to prevent the flames reaching the rafters. With regard to the thatch, I took a sample, which had been impregnated, to the fire chief, who tried his utmost to set it alight, which he found impossible; therefore, the scheme was passed by the council on his report on the experiments made. With regard to the insurance I have obtained the ordinary rates.

Margate. FREDK. A. WALKER.

Cracked Chimney Stacks.

[ANSWER TO J. S. B., FEBRUARY 12.]

SIR,—No doubt these flues have been on fire. The remedy is to keep swept, and warn the occupants against nuisances of this kind in future. CONSTRUCTION.

Asbestos Sheet Ceilings—Apparent Dampness.

[ANSWER TO R. S. T., FEBRUARY 19.]

SIR,—This is doubtless condensation on the cold impermeable surface of the asbestos cement. Papering with the thickest matt surface paper will probably reduce the trouble to tolerable limits. CONDENSATION.

Mahogany Panelling: Bringing up the Grain.

[ANSWER TO L. A. B., FEBRUARY 19.]

SIR,—The wood probably needs stripping and restaining and polishing. The stain and polish should be pickled off carefully with caustic and the work then renewed to taste. STAIN.

Damp House: Cure Required.

[ANSWERS TO A. P., FEBRUARY 19.]

SIR,—It is impossible to follow from your correspondent's description what form of dampness is suffered : whether rising in the lower part of the walls or penetrating the outer walls in rainfall. If the walls are solid the poor mortar will account for much. If properly constructed cavity walls, the mortar should not have much effect. I advise your correspondent to have the house properly surveyed by a qualified architect. SURVEYOR.

SIR,—Dampness in old houses is often due to a defective damp-course. The natural deterioration which would occur in a life of 30 years would account for deterioration. As the next house appears to be dry, the trouble appears to be local in the damp house. A close examination of the damp-course may reveal a defect. Cracks may have occurred at some point obscured from view, allowing damp to enter, or the guttering may be defective. If the mortar is weak and crumbly and these joints are exposed to the weather they will permit the penetration of moisture. These joints must be kept well pointed, as it is possible that it is there moisture is entering. W. E. W.

Pest of Ants in House.

[ANSWER TO J. C. W., FEBRUARY 19.]

SIR,—Gas treatment against ants has never to my knowledge been effectively tried. Paraffin oil is effective to where it penetrates, but this is seldom as far as the nests. What is needed is a heavy oil which saturates the earth round the ant-holes; this will kill any ants which come in contact with it and will so contaminate the earth that ants will not go near it. For this purpose creosote or any similar oil can be used. The smell of these preservatives will prevent ants nesting near it. There are also proprietary ant-destroyers on the market. Pouring creosote into the ant-holes and then filling them at the top with a red lead paste, this being also used to stop all cracks, will in a short while prevent this pest. W. E. W.

Dampness in Wall.

[ANSWER TO BUILDER, FEBRUARY 19.]

SIR,—The setting coat must be carefully applied and as thinly as possible on a waterproofed surface, which by its nature has no suction. Any good manufacturer of waterproofing materials would advise a suitable material and method of mixing and applying. SURFACE.

THE WEEK IN PARLIAMENT

Price of Building Materials.

MR. LECKIE asked the Minister of Health whether, in view of the considerable advances now taking place in all kinds of building material and the consequent increased cost of municipal houses for the working classes, he would set up machinery to control prices and so prevent profiteering.

SIR KINGSLEY WOOD said that the building of houses by local authorities was only one factor in the present demand for building materials. His hon. friend could rest assured that the cost of these houses and the prices of building material were being closely watched by his Department, and where tenders had been unduly high he had asked for them to be reconsidered.

Slum Clearance.

SIR R. GOWER asked the Minister of Health if he could state the number of small owner-residents who had been dispossessed as a result of slum-clearance operations during the last two years; and the number of such cases in which any compensation had been paid.

SIR K. WOOD said that statistics were not available of the number of owner-residents involved in slum clearance operations. He assumed his hon. friend had in mind in the second part of his question the payments authorised by the Act of 1935 in respect of well-maintained houses. Up to December 31 last he had given directions for such payments to be made in 2,369 cases.

SIR R. GOWER asked the Minister of Health if he could make any statement as to the extent to which owners of small businesses, swept away in slum-clearance operations during the last two years, had been compensated by the authorities dispossessing them.

SIR K. WOOD said that the allowances to the owners of small businesses to which his hon. friend referred were entirely at the discretion of the local authority, and he had no statistics for the period in question. He had, however, expressed the hope that local authorities would exercise their powers to make reasonable allowances in all suitable cases. He proposed to obtain information on the subject and would communicate with his hon. friend when this information was available.

MR. ROSTRON DUCKWORTH asked the Minister of Health if he could state how many reports from his inspectors in respect of slum-clearance orders were considered by him during 1936; and whether, in any of these cases, he had ordered an inquiry by an independent tribunal.

SIR K. WOOD said that 4,064 reports were made by Housing Inspectors during 1936 in connection with slum clearance operations : all the inquiries which he directed for this purpose were held by officers of his Department.

THE BUILDING TRADE

BUILDING LAWS AND REGULATIONS—IX

By B. PRICE DAVIES, F.S.I.,

(Author of "Estimating for Buildings and Public Works," etc.)

PRIVATE SEWERS (continued).

SECTION 38 is again important for estate development, for it gives the local authority the power to ask that buildings can be drained by means of a private sewer instead of separate drains, with their numerous connections to the public sewer. The first part is as follows :—

"38. (1) Where a local authority might under the last preceding section require each of two or more buildings to be drained separately into an existing sewer, but it appears to the authority that those buildings may be drained more economically or advantageously in combination, the authority may, when the drains of the buildings are first laid, require that the buildings be drained in combination into the existing sewer by means of a private sewer to be constructed either by the owners of the buildings in such manner as the authority may direct, or, if the authority so elect, by the authority on behalf of the owners;

"Provided that a local authority shall not, except by agreement with the owners concerned, exercise the powers conferred by this sub-section in respect of any building for the drainage of which plans have been previously passed by them."

Using Fig. 118 again*, and with regard to the connections from the semi-detached houses on the south side of the cul-de-sac, the local authority could, as a condition of passing the plans, ask for a private sewer from point "W" on the public sewer to point near "P" in order to drain the houses. This would dispense with several connections across the roadways (including "M-N"). Note that this length of "W-P" would be a private sewer for the "drainage of buildings in combination," and not a "combined drain." The length "G-E" is an example of such a private sewer, for it serves more than one building.

Sub-section (2) is partly quoted thus :—

"38. (2) A local authority who make such a requirement as aforesaid shall fix the proportions in which the expenses of constructing, and of maintaining and repairing, the private sewer are to be borne by the owners concerned, or, in a case in which the distance of the existing sewer from the site of any of the buildings in question is or exceeds one hundred feet, the proportions in which those expenses are to be borne by the owners concerned and the local authority, and shall forthwith give notice of their decision to each owner affected."

This is followed by the means of appeal which can be made by the owner against the decisions of the local authority.

From the above quotation it can be observed that if the public sewer is more than 100 ft. from the site of any of the buildings, the local authority are to pay the cost of the intervening length. Referring to Fig. 118 again, and assuming that the length "F-G" is now our example, and that the distance from curtilage angle "T" to point "Y" is 100 ft., then the local authority would have to bear the cost of "F-Y."

Now follows an exception of the rule for the definition of a public sewer, and the next sub-section is quoted accordingly.

"38. (3) A sewer constructed by a local authority under this section shall not be deemed to be a public sewer by reason of the fact that the expenses of its construction are in the first instance defrayed by the authority, or by reason of the fact that some part of those expenses is borne by them."

By means of this sub-section a length of private sewer can be constructed by the local authority for private owners, without the sewer becoming automatically a public sewer. In the case of the length "F-G," the entire length would be a private sewer maintainable by the private owners, although the cost of "F-Y" were borne by the local authority. There is no statement that the authority have power to enter on to any lands for the construction of a private sewer in the way they have power under Section 15 to enter on any lands for the construction of a public sewer, but the power is there by inference, although it is limited to the lands of the owners concerned.

Sub-section (4) pronounces the eventual doom of the term "combined drain."

"38. (4) So much of any local Act as empowers a local authority to require in certain cases the construction of a combined drain is hereby repealed."

Private Sewers for Existing Buildings.

We now come to the more complicated problems associated with existing buildings, and we quote Section 39 in full, thus :—

"39. (1) If it appears to a local authority that in the case of any building—

*(*a*) satisfactory provision has not been, and ought to be, made for drainage as defined in section thirty-seven of this Act; or

(*b*) any cesspool, private sewer, drain, soil pipe, rainwater pipe, spout, sink or other necessary appliance provided for the building, is insufficient or, in the case of a private sewer or drain communicating directly or indirectly with a public sewer, is so defective as to admit subsoil water; or

(*c*) any cesspool or other such work or appliance as aforesaid provided for the building is in such a condition as to be prejudicial to health or a nuisance; or

(*d*) any cesspool, private sewer or drain formerly used for the drainage of the building, but no longer used therefor, is prejudicial to health or a nuisance;

they shall by notice require the owner of the building to make satisfactory provision for the drainage of the building, or, as the case may be, require either the owner or the occupier of the building to do such work as may be necessary for renewing, repairing or cleansing the existing cesspool, sewer, drain, pipe, spout, sink or other appliance, or for filling up, removing or otherwise rendering innocuous the disused cesspool, sewer or drain.

"The provisions of Part XII of this Act with respect to appeals against, and the enforcement of, notices requiring the execution of works shall apply in relation to any notice given under this sub-section.

"(2) Sub-sections (3) and (4) of section thirty-seven of this Act shall apply in relation to any drain which a local authority require to be constructed under this section as they apply in relation to any such proposed drain as is mentioned in that section.

"(3) Subject as hereinafter provided, the provisions of sub-section (1) of this section, so far as they empower a local authority to take action in such cases as are mentioned in paragraphs (*a*) and (*b*) of the sub-section, shall not apply in relation to a building which belongs to any statutory undertakers and is held or used by them for the purposes of their undertaking;

"Provided that the exception conferred by this sub-section shall not extend to houses, or to buildings used as offices or showrooms, other than buildings so used which form part of a railway station."

These provisions are fairly clear, and grant the local authorities considerable powers for dealing with existing conditions.

We next come to the pipes discharging into drains, and the provisions of Section 40 are quoted accordingly. It can be pointed out that "sanitary conveniences" is a term applied to closets and urinals. It does not include lavatory basins and wash-ups, but it does include slop closets.

"40. (1) No pipe for conveying rain water from a roof shall be used for the purposes of conveying the soil or drainage from any sanitary convenience.

"(2) The soil pipe from every water-closet shall be properly ventilated.

"(3) No pipe for conveying surface water from any premises shall be permitted to act as a ventilating shaft to any drain or sewer conveying foul water.

"(4) If it appears to the local authority that there is on any premises a contravention of any provision of this section, they may by notice require the owner or the occupier of those premises to execute such work as may be necessary to remedy the matter.

"The provisions of Part XII of this Act with respect to appeals against, and the enforcement of, notices requiring the execution of works, shall apply in relation to any notice given under this sub-section."

From this it will be seen that the waste from lavatory basins can join the roof water as far as this section is concerned, unless separate surface water drains are required where separate sewers are provided.

The last section which we take in connection with drains and private sewers concerns the disturbance of an existing system. It is essential for the local authority to be notified of such proposals and to supervise the work. In the following quotation, it will be seen that it does not demand a plan to be served with the notice. This applies to existing drains, and not to those of new buildings.

"41. (1) In a borough or urban district, and in a rural district or contributory place in which section thirty-nine of the Public Health Act, 1925, was in force immediately before the commencement of this Act, no person shall—

(*a*) except in case of emergency, repair, reconstruct or alter the course of, any underground drain which communicates with a sewer, or with a cesspool or any other receptacle for drainage;

(*b*) where in a case of emergency any such works have been executed without notice, cover over the drain or sewer;

without giving to the local authority at least twenty-four hours' notice of his intention so to do.

* See *The Builder*, January 29.

"(2) While any such work as aforesaid is being executed, all persons concerned shall permit the surveyor or sanitary inspector, or any other authorised officer, of the local authority to have free access to the work.

"(3) A person who fails to comply with any requirement of this section shall be liable to a fine not exceeding five pounds.

"(4) Nothing in this section shall apply in relation to—

(*a*) so much of any drain or sewer constructed by, or belonging to, a railway company as runs under, across, or along their railway; or

(*b*) so much of any drain or sewer constructed by, or belonging to, dock undertakers as is situate in or on land of the undertakers which is held or used by them for the purposes of their undertaking."

Breaking Open of Streets for Sewers and Drains.

This subject is inevitably associated with the laying of sewers and drains, and Sections 279 to 292 of the Public Health Act of 1936 deals with it. These are of extreme length, and it is not practicable to deal with them here other than as brief comment.

The powers granted to local authorities for laying and inspecting sewers in streets, and to private owners for investigating and repairing sewers and drains, are based upon the provisions of Sections 28 and 30 to 34 of the Waterworks Clauses Act, 1847.

Briefly, it can be said that where empowered by enactment. a local authority or a private person can break open a road after giving due notice to the road authority concerned (the period of notice is generally stipulated, and is seven clear days in the case of Section 279 of the Public Health Act of 1936). The breaking up must be done with as little road disturbance as is practicable, with all protection required for public safety, with due and proper reinstatement of the road surface, and with its maintenance for a stipulated period, usually twelve months.

UNSATISFACTORY SCHOOLS

Schools which "darken the lives of teachers and children" were referred to by Miss Freda Hawtrey, Principal of Avery Hill Training College, London, and a member of the Committee of the "Ten-Year Plan for Children," speaking to members of the Durham and Newcastle branch of the Froebel Society at Chester-le-Street recently. "About 80 per cent. of school buildings in England and Wales fall below the standard of modern requirements," said the speaker. "What is the use of talking of physical fitness when children must sit for five and a half hours a day in a classroom like a well, with windows too high to see out of and an asphalt yard with 'offices' as its only ornament to play in? How can hygiene be taught to children who must use cracked and dirty basins with one piece of soap and one towel between perhaps a hundred or more?" Reorganisation of schools under the Hadow plan would mean very little unless buildings were reconditioned to meet new requirements. The aim of the "Ten-year Plan" was to rebuild or reconstruct the schools of England. The modern school, she contended, should contain libraries, gymnasia, handiwork rooms, school kitchens, and canteens. Adequate nutrition should come before physical training.

An "Harmonic Induction" Engine.

A reprint of a paper on "The Petter Harmonic Induction Engine," by Mr. P. B. K. Petter, B.A., is now available from Petters, Ltd., Yeovil. Details of this engine were given in our issue for December 11, 1936.

BALLAST, SAND AND ALLIED TRADES ASSOCIATION

A CELEBRATION DINNER

A DINNER to celebrate the obtaining of the Weights and Measures Act, 1936, was held at the Connaught Rooms, London, on February 17, under the auspices of this Association. Between 180 and 190 sat down to dinner, and among the guests of the evening were: Mr. A. Strachan Bennion, Mr. Ernest J. Brown, F.I.O.B., Lt.-Col. E. J. Burt, T.D., R.E., Messrs. P. Foddering, P. Good, S. McPherson, S. H. McQuown, Alexander Melville, Major Leslie Shingleton, O.B.E., Mr. E. S. Shrapnell-Smith, C.B.E., Rear-Admiral Sir Murray F. Sueter, C.B., M.P., Vice-Admiral E. A. Taylor, C.M.G., M.P., Major F. G. Turner, of the Ministry of Transport, and Mr. Herbert G. Williams, M.P.

In proposing the toast of "The Association," Mr. H. G. Williams congratulated the Association on the result of its work in getting the Weights and Measures Act, 1936, on to the Statute Book. The effect of the Act, he said, would be that the eighth commandment would be more observed throughout the industry. He referred to the great difficulties that attained in framing any Act, and congratulated the Board of Trade on their work. He said that before the Act could actually operate, regulations had to be made, but before such regulations were laid on the table they would be submitted to the trade interests concerned.

The President's Response.

In replying to the toast of "The Association," the Chairman, Mr. A. J. Arnold, said that he wished to take this opportunity of personally thanking those Members of Parliament who had supported the Bill, and the representatives of various organisations who had assisted the Association in its work who were present that night. He also mentioned the great assistance which the Association had received from county surveyors, and expressed his thanks to the members of his Council for the many hours they had spent in connection with the work of the Association, and particularly mentioned those members who had served on the Weights and Measures Act Sub-Committee: Messrs. R. F. Bacon, R. S. Brewis, H. E. Ford, H. E. Peirce, T. R. Sanders, and A. F. Shaw.

Mr. Frank Wells, the immediate past and founder Chairman of the Association, whose name had been coupled with the toast, said that, judging from the number present, it would appear that there was a very real interest now taken in the work of the Association. He was surprised that the Government had not taken action in the matter of legalising the cubic yard as a measure of capacity some time ago, as he understood that this matter had been raised with the Board of Trade long before 1929, at which time he approached the Institute of Quarrying in connection with this matter. He must generalise in saying that the position in a large section of the trade was such that, if one had to quote for a large quantity of materials, it had to be on the assumption that some sort of fraud was going to be perpetrated, as it was not possible to quote competitive figures otherwise. Those who were opposed to this system of trading found themselves in an extremely difficult position, as they either had to do what others were doing, or stand down from tendering. This bad condition was brought about by a certain section of the trade who had no real interest in the retention of any good name in the industry. He said that no period in the life of the Association had been easy. Members had been referred to, by a certain section of the trade who would not join, as the "Purity League," and on one occasion he had heard a meeting referred to as the "Meeting of the Forty Thieves." He said that all manner of similar jokes were hurled at the Association at first, but investigations had proved that there was something wrong in the methods by which much of the business in the industry was conducted.

The Association had endeavoured by means of its loading line and delivery ticket system to bring about a better condition in the trade, but it became evident that matters could only be improved by compelling everybody to deliver materials under the one system. It was very difficult to convince consumers that there was no catch in it, and, presumably for that reason, the whole-hearted support which might have been expected did not materialise. Many consumers, however, tested the system, and, failing to find any catch, refused to accept materials delivered in any other manner. At the present time, nearly nine thousand loading line plates had been issued to members, and one and three-quarter million delivery tickets. He concluded by paying a tribute to the staff work of Mr. E. V. Smith, the Secretary.

In proposing the toast of the "Guests," Mr. H. E. Peirce expressed the great appreciation which the Association felt for those who had so ably given their knowledge and influence to the tremendous task of having placed upon the Statute Book the Weights and Measures Act, 1936. He said that the industry had, after all, only brought itself into line with practically every other commodity as it passed from producer to buyer, giving the latter legal protection that he should receive that quantity for which he paid—or, at any rate, for which he was charged.

In replying to the toast of the "Guests," Rear-Admiral Sir Murray F. Sueter said that he agreed with the remarks made by Mr. F. Wells, the Founder Chairman. He said he had taken a great interest in the work which the Association was doing, and realised its necessity. It was protecting the interests of the consumer, and he said that the need for some measure of this kind in every industry was brought to his notice when he changed his coal supplier. He was surprised at the quantity of coal he received, and found that on previous occasions he could never have received the quantity for which he paid.

Mr. A. Strachan Bennion (Chairman of the B.S.I. Technical Committee) also replied on behalf of the guests, and congratulated the Association on having such efficient representatives on the committee of which he had had the honour to be Chairman.

BRITISH STANDARDS

B.S.I. HANDBOOK OF INFORMATION

The British Standards Institution have issued their half-yearly handbook, which includes the indexed list of current British Standard Specifications to January 1 last. The issue is of particular importance to electrical engineers and the industry generally, as it contains a special report on "Standardisation in the Electrical Industry," by Mr. Charles P. Sparks, C.B.E., whose portrait is shown. It is of interest to note that there are now over 800 technical and sub-committees in the three existing divisions of the work, viz., building, chemical and engineering. The usual sections showing the current list of British Standard Specifications, the new and revised specifications recently issued and those in course of preparation, are followed by a complete subject index. A further section is devoted to an Index of the Methods of Tests contained in the various British Standards. Copies of the new handbook (under reference CE 2,400) are available from the British Standards Institution, Publications Department, 28, Victoria-street, London, S.W.1, price 1s. 4d., post free.

MASTER BUILDERS' BANQUETS

BURTON MASTER BUILDERS.

Speaking at the annual dinner of the Burton branch of the National Federation of Building Trades Employers, Sir J. Walker-Smith (Director, National Federation) said that he believed that the building trade organisation was acting as a spear-head for self-determination in industry, and that it was bound to succeed, inasmuch as it was based upon the policy of rendering service to the public. The services for which the building industry would be needed were without limit, and therefore it was possible to take a long-term view of the policy which should govern their conduct of industry.

Employers' Relationship with Labour.

"There is particularly one respect in which I think that the building industry is setting an example for all other industries to follow, and that is in regard to the relationship with labour," continued the speaker. "This National Federation is concerned to regulate jointly with the operatives the wages, hours and conditions of labour applicable to one million men engaged in the building industry. Our joint organisation has been gradually perfected until it is approaching an ideal which may serve as a model for all other industries. . . . We are on the best of terms with our operatives. Our policy is to pay the highest wages and grant the best conditions of labour which the industry, made and maintained prosperous by our joint efforts, is capable of yielding, having due regard always to the general economic conditions of the country as a whole.

"We believe that our policy is progressive, and we do not claim that it is altruistic but is based upon intelligent appreciation of self-interest and the real and ultimate interest of all concerned in the industry.

"We have to remember that in our industrial agreements there is no sanction whatever behind our agreements with the operatives other than mutual good will. The good will of our operatives we must earn by unfailing fairness and sympathetic understanding. We must never fail to play the game with them. We will never attempt to drive an unfair bargain nor to out-manœuvre them. We believe that for an agreement to endure, it must not only be fair, but must be recognised as perfectly equitable by both sides. We apply an open and, I hope, sympathetic mind to all of their considered demands. We are, for instance, preparing a scheme for some payment for time lost by bad weather. It will take the form of an insurance scheme supplementary to the National Insurance Scheme. Of general application to the whole industry, contributory by both sides and providing for payment of one-half of the normal rate for the time lost, it will cost the employers and the operatives 6d. each per man per week. It will raise the wages bill by about 1 per cent., and the cost of work by about 6s. 8d. per £100.

Holidays with Pay for Operatives.

"We shall also in due course need to consider jointly with the operatives the question of providing some annual holidays without loss of pay. This is more easily done in connection with many industries than it is with such nomadic activities as those of the building industry, where the personnel employed varies so greatly from time to time. Nevertheless, the great difficulties, thought at one time to be unsurmountable, which were presented in the case of making provision for some compensation for time lost through bad weather, were probably as great as those applying to a scheme for securing an annual holiday without loss of pay to workmen in the building trade. A Private Member's Bill was introduced in the House of Commons to give effect to a policy of that kind. It obtained a second reading, and will go to Committee.

"Personally, I opposed it upon the ground that it was impracticable to do as a matter of general legislation, but might be more easily and satisfactorily dealt with separately in each particular industry concerned by organised bodies of employers and operatives acting jointly and dealing with the matter upon some method of supplementary insurance or by some similar method that might be most acceptable to both parties of the industry, knowing as they do their particular needs and their particular difficulties and their own special requirements."

He had learned that evening, concluded the speaker, that there was a movement afoot in Burton-on-Trent whereby the building operatives of the great firms of Bass and Worthington might have some arrangement made for them to provide an annual holiday without loss of pay.

The Mayor (Councillor W. P. Stanley), in response to the toast of "The Guests," said that as a Corporation they always tried to keep as much work in the town as possible, but they had to realise that they must accept the lowest tenders unless they could prove to the Ministry just and adequate reasons why they should accept another tender. In his municipal life he had always held the view that the lowest tender was not necessarily the cheapest. He wished that they could obtain some amendment of the regulations whereby a municipality which was conducting its affairs in a fair and proper manner could decide the ultimate destination of a tender.

ALDERLEY EDGE, WILMSLOW AND DISTRICT.

Speaking at the annual dinner of the Alderley Edge, Wilmslow and District Building Trade Employers' Association, Mr. H. Uttley said that the building trade had to consider whether or not they were receiving the dues to which they were entitled in the increase of trade. Wages had increased by a penny an hour, materials had increased by 50 per cent., and as they were not shopkeepers, who could increase their goods accordingly, the firms with contracts over a long term had to bear the heavier cost themselves.

In regard to the shortage of skilled labour the employers could help by the fact that the Federation, having been in close association with the trade unions, had the right to ask that skilled labour should be attracted to Federation employers. The non-federated employers picked the best of their Federation rules and left the others, increased wages and allowed the operatives to work as long as they liked, so that he was of opinion the trade unions were not fair to federated employers in allowing that to continue. The speaker also gave it as his opinion that federated employers should have preferential treatment from the manufacturers, because they were the people who obtained the best out of the industry.

Mr. James S. Randle (President, N.W. Federation), who responded, referred to the fact that a scheme to settle the "wet-time" question would probably be put into operation this year upon the basis that it was national in scope, contributory both by employer and employee, and that the compensation payable in respect of lost time should not exceed 50 per cent. of the men's wages. After several years' work an Act had been passed through Parliament, and the scheme would be worked in conjunction with the Ministry of Labour. It was estimated that sixpence per head for employer and employee would be fixed as a contribution. Conditions were now very much changed for the better, for they had the National Joint Council agreement that fixed the hours of work at 44 per week, and wages at 1s. 7d. per hour, but it was very disheartening to see their best craftsmen drawing, at the end of the week, half or three-quarters of a weekly wage, when they had been prepared to work had the conditions allowed them to do so.

THE BRISTOL ASSOCIATION.

At the annual banquet of the Bristol Association of Building Trade Employers (Mr. Conrad K. Cowlin presiding) Mr. C. R. Setter, proposing "The City and County of Bristol," said that two features particularly affecting the city occurred to him. He felt sure it was the intention of the local government to push ahead with foreshadowed developments in connection with the King George Memorial Fund. The transformation of the Centre should proceed coincidentally with the making of those two fine new roads, new bridges, and the civic hall.

The second point was that the Council might from the goodness of their hearts carefully consider the terms of a memorandum received from the Minister emphasising that the lowest tender need not necessarily be accepted. It was indeed a fact that the cheapest tender was in some cases the dearest price. Imperial Departments and the London County Council had approved lists of builders and engineers whose work could be relied upon. He asked the City and County of Bristol to act similarly. He asked for the co-operation of the local authority in connection with the scheme for the registration of house-builders—a scheme which had for its primary object the total elimination from the industry of the jerry-builder. He ventured to prophesy that the building and civil engineering industries would be busy for many years to come.

The Lord Mayor, responding, said that he did not think the appellation "speculative builder" was a correct one. They should be called the optimistic builders. They were like Dr. Johnson's aphorism in relation to second marriages. They often turned out to be a triumph of hope over experience. He was serious when he said that Bristol owed a great deal to what was called the speculative builder. He foresaw what might be or would be required. He anticipated, and they were indebted to him. It was the jerry-builders who should be excised from the trade, and he hoped they would take steps to see that they did not continue in the trade.

During the evening Mr. Cowlin installed the new president, Mr. L. E. Weeks.

BRISTOL CLERKS OF WORKS

THE annual dinner of the Bristol Association of Clerks of Works and Builders' Foremen was held recently. Mr. A. V. Turner, proposing the toast of "Architects, Builders and Visitors," referred to Mr. Gordon Hake's efforts to revive the craft of the thatcher, to keep the West Country unspoilt, and to prevent the erection of "whitewashed sepulchres" all along the highways. Continuing, the speaker said that during the next two or three years the architects in the city would be called upon to watch Bristol's interests in connection with the planning of the King George V Memorial. He suggested that trees should be transplanted to form an avenue that would, perhaps, help to prevent the memorial being turned into an avenue of Belisha beacons. Another suggestion made by the speaker was that builders, when they had completed a house, should have a hall-mark stamped on the key, which would be a sign when handed to the purchaser that the house had been built by a master builder, was good value for money and was guaranteed to last for a number of years.

Mr. Gordon Hake, responding for the architects, said he was particularly interested in the use of thatch in view of the appalling way in which galvanised iron was being used in its place. He now found himself faced with the task of compiling a comprehensive list of thatchers. His own contribution was the offer of a scholarship to any likely lad who wished to become a thatcher.

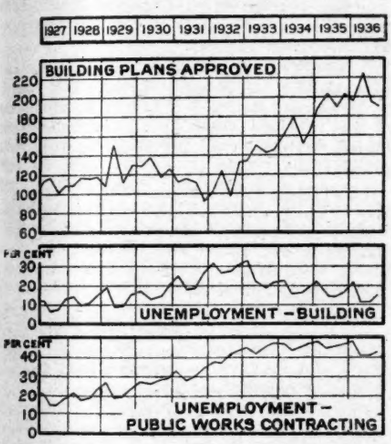
Mr. L. E. Weeks, who responded for the builders, said he thought that if there should be a boom in the building trade in the next few years they were likely to be faced with a shortage of foremen and craftsmen.

BUILDING STATISTICS

RETURNS as to the estimated cost of buildings for which plans were approved during January have been received from 141 of the 146 local authorities which supply such information to the Ministry of Labour. The returns indicate a total of £7,980,500 worth of work, which compares with a figure of £8,813,000 for January, 1936. This represents a decrease of 9.4 per cent.

The largest decrease is represented by dwelling-houses, which drop from £5,924,500 to £4,263,700. This is only partially offset by increases in industrial building (+ £305,800); shops offices, etc. (+ £155,100); churches, schools and public buildings (+ £119,200); and other buildings (+ £248,200).

This diminution of total volume follows in line with the figures for the last quarter of 1936 (details of which also are given in the *Ministry of Labour Gazette*). The total estimated value for that period, £27,688,700, is a decrease of 6.1 per cent. over the corresponding figures for 1935. Again, the greatest decrease is seen in the estimated cost of dwellings, which decreased from £20,522,100 in October-December, 1935, to £17,841,200 in the last quarter of 1936. The



actual number of houses which this represented was 41,782 in 1935 and 37,758 in 1936. All other classes of building showed an improvement in 1936 except for shops, offices, etc., which gave a decline of 13.5 per cent. over the 1935 figure.

Taken by districts, percentage increases over the corresponding period in 1935 in total estimated value of plans were recorded in October-December last in the following districts: Northern Counties, 15.6; Yorkshire, 18.2; North and West Midlands, 24.4; and Scotland, 10.9 per cent. Decreases were recorded in all other districts, especially in Outer London, 32.2; South Midlands and Eastern Counties, 20.8; South Eastern Counties, 20.2; and South Western Counties, 17.6.

Employment Statistics.

Employment at January 25 showed a slight seasonal decline, on the whole, as compared with December 14, though some improvement was recorded in the North of England. As regards individual occupations, employment was good, for the time of year, with bricklayers and carpenters, bad with painters, and fair with other classes of skilled operatives; in some areas shortages of skilled operatives, particularly bricklayers, were reported. Among labourers, etc., employment was very slack. At the former date 182,609 insured men were registered as unemployed (17.9 per cent.). This shows an increase of 0.2 per cent. over December's figures, but a decrease of 10.2 per cent. over the figures for January, 1936.

The graphs reproduced (taken from the *Ministry of Labour Gazette*) show the annual curve of estimated building works from 1927-1936; also of employment in the building trades and in public works contracting.

"SCIENCE AND BUILDING" EXHIBITION

A "SCIENCE and Building" Exhibition, which is to be held at the Building Centre, 158, New Bond-street, London, W.1, is being arranged at the invitation of the Building Centre, by the Department of Scientific and Industrial Research. It will be opened by Mr. Percy Thomas, P.R.I.B.A., on March 1, and will remain open until March 25.

The object of the exhibition is to illustrate the work being carried out by the various organisations controlled by the Department, or associated with it, of interest to the building industry, not only in the solution of general building problems, but also in the solution of some of the more specialised problems which the industry is not infrequently called upon to face.

The exhibition will be very wide in its scope. The exhibit provided by the Building Research Station will deal with such subjects as concrete, plastering materials, fire resistance, bituminous materials and building units for walls and roofs. An exhibit by the Fuel Research Station will illustrate work on domestic heating. The exhibit of the Forest Products Research Laboratory will cover wood preservation, dry rot, resistance of timber to abrasion, timber seasoning and insect damage. Interesting exhibits will be shown by the National Physical Laboratory on illumination in buildings, acoustics and engineering investigations such as wind pressure on structures and mechanical tests on structural steels, etc. The exhibit by the Water Pollution Research Board and the Department's Chemical Research Laboratory will deal with water softening, the removal of dissolved salts from water and contamination of water by lead. British marbles will be dealt with in an exhibit provided by the Geological Survey of Great Britain. The Industrial Research Council of the British Iron and Steel Federation will show models of steel-frame buildings intended for working-class flats, and the applications of foamed slag as an aggregate for lightweight concrete. An exhibit by the Non-Ferrous Metals Research Association will deal with galvanising and zinc coatings and recent investigations on the frost-bursting of water pipes. Interesting exhibits will also be presented by the Cast Iron Research Association, the Paint Research Association and the Rubber Research Association.

Many of the exhibits will be amplified by cinema films, which will be shown during the course of each day. Lectures have also been arranged to take place at 8 p.m. on March 3, 10, 17 and 24. These lectures will deal with subjects of interest to architects and builders: details will be issued later. It is hoped that the exhibition will bring to the notice of all concerned in good building the vast amount of knowledge which has already accrued as the result of scientific research.

PRIZES FOR PAPERS ON WELDING

THE James F. Lincoln Arc Welding Foundation, of U.S.A., which is affiliated with Lincoln Electric Company, Ltd., of Welwyn Garden City, is offering $200,000 (approximately £40,000) to be distributed among winners of 446 separate prizes for papers dealing with arc welding as a primary process of manufacture, fabrication or construction in eleven major divisions of industry. The principal prize winner will receive not less than $13,700 (£2,740). Other prizes range from $7,500 to $100—the latter sum to be awarded each of 178 contestants who receive no other prize, but whose papers are adjudged worthy of honourable mention. In order to assure equal competitive opportunity, similar prizes are offered in the eleven major divisions of industry covered by the contest. These divisions are: Automotive, Aircraft, Railroad, Watercraft, Structural, Furniture and Fixtures, Commercial Welding, Containers, Welderies, Functional Machinery and Industrial Machinery. Submitted papers should describe either the redesign of an existing machine, structure, building, etc., so that arc welding may be applied to its manufacture; or should present a design (either in whole or in part) of a machine, structure, building, etc., not previously made—the description to show how a useful result, which was impractical with other methods of construction or could better be done by arc welding, is obtained. Full details are obtainable from the Foundation Secretary, Mr. A. F. Davis, P.O. Box 5,728, Cleveland, U.S.A., to whom papers must be sent by June 1, 1938.

CEMENT-BOUND REFRACTORIES

THE Lafarge Aluminous Cement Co., Ltd., have issued a book under the title "Refractory Concrete: A New and Improved Refractory Material." This book covers the application of aluminous cement for a purpose for which cement has not hitherto been used—that is, as a bond for refractories which will give a good cold strength without pre-firing, and will at high temperatures also form a refractory matrix with a high bond strength. Refractory concretes made with "Ciment Fondu" aluminous cement have characteristics, we believe, which distinguish them from the various plastic refractories at present available for industrial service; these characteristics include low shrinkage and ability to withstand rapid temperature changes without spalling.

The book contains details of the experimental work carried out using "Ciment Fondu" as a bond for chrome, magnesite, sillimanite, fused alumina, etc., and not the least interesting section is that containing photographs of bricks, saggars, muffle doors, etc., made with refractory concrete, in excellent condition after being in use for long periods and subjected to temperatures as high as 1,600 deg. C. There is a series of graphs showing compressive strengths, unfired; refractoriness under load, normal method; stability curves; thermal expansion, etc., etc. The book, in short, is one which must interest both manufacturers and users of refractories, to whom we heartily commend it. It is published from Lincoln House, 296-302, High Holborn, W.C.1.

COAL-BURNING APPLIANCES BOARD

THE Coal-Burning Appliances Joint Consultative Board held its quarterly meeting recently. The progress of the formation of Local Joint Committees of coal merchants, ironmongers, builders' merchants, and coal-burning appliance manufacturers was reported. Committees are formed, or in process of formation, in the following towns: Bedford, Birmingham, Bristol, Guildford, Leeds, Liverpool, Manchester, Newcastle, Norwich, Nottingham, Sheffield, Southampton, and Southend.

Steps are being taken to set up committees in the following further centres: Ipswich, Plymouth, Leicester, Cardiff, Swansea, Edinburgh, Glasgow.

The Board examined the scheme for facilitating hire-purchase of coal-burning appliances, and decided to proceed with part of the proposals submitted by United Dominions Trust. The scheme will include the creation of a service fund to assist in giving the fullest possible after-sales service to purchasers of coal-fired stoves, ranges and grates.

The Education Committee of the Board reported that 42 lectures dealing with the design and operation of coal-burning appliances had been arranged for the present winter, of which 24 have already been given.

The arrangements whereby the Secretariat of the Board was carried out by the Combustion Appliance Makers' Association (Solid Fuel) have been confirmed for the forthcoming year, and the considerably augmented resources available owing to an increased grant from the Coal Utilisation Council will enable a more extensive programme of work to be carried out this year.

NEW BUILDINGS IN LONDON

ACTON. — ADDITIONS.—Messrs. J. Dorey and Co., High-street, Brentford, are the builders for additions to the works in Westfields-road, for the Acton Property Trust. The plans have been approved by the T.C.

ACTON.—ADDITIONS.—Plans submitted by the Industrial Constructions, Ltd., 137, Victoria-street, S.W.1, for additions to the premises of Messrs. Landis and Gyr, Ltd., in Victoria-road, have been approved by the T.C.

ALDWYCH. — ALTERATIONS. — H.M.O.W. have placed a contract with Messrs. Higgs and Hill, Ltd., 14, Godliman-street, E.C.4, for alterations to the branch post office.

ALPERTON. — FACTORY.—Messrs. Johns, Son and Watts, Ltd., 40, City-road, E.C.1, have had plans prepared for a cardboard-box factory in Westmoreland-road. The contractors are Messrs. J. Laing and Sons, Ltd., Mill Hill, N.W.7.

BARKINGSIDE.—SHOPS.—Plans have been prepared by Messrs. Marshall and Tweedy, FF.R.I.B.A., 9-13, New Cavendish-street, W.1, for 13 shops, 12 maisonettes, and 2 flats in Clarence-terrace, High-street.

BARNES.—BUILDINGS.—For the erection of a cottage, pavilion and convenience at Palewell Fields, East Sheen, the B.C. has placed a contract with Messrs. H. and G. Jackson, Ltd., 35a, High-street, Barnes, at £2,308 2s. 6d. Mr. F. P. Kindell, Assoc. M.Inst.C.E., Borough Engineer and Surveyor, has prepared the plans. The quantities by Mr. J. Pritchard Williams.

BARNES.—REBUILDING.—Messrs. W. Hillier and Sons have had plans prepared for the rebuilding of their works and offices at 509, Upper Richmond-road, S.W.14.

BATTERSEA.—REBUILDING.—Messrs. Mann, Crossman and Paulin, Ltd., brewers, are proposing to rebuild on a new site the "Butcher's Arms" beer-house in Savona-street.

BLACKFRIARS-ROAD. — BUILDING. — Messrs. Geo. Shaw (Builders), Ltd., 8, Wigmore-street, W.1, is the builder for new work which is to be carried out at Nos. 209 and 210. The demolition work is by the London Demolition Co., Ltd., London-road, Isleworth.

BOW.—ALTERATIONS.—And extensions are to be made to the Coopers' Company's School for the governors, who have accepted the tender of Messrs. John Greenwood, Ltd., 12, Arthur-street, E.C.4, at £7,873, for the work. The plans have been prepared by Messrs. George Elkington and Son, 7, Laurence Pountney-hill, E.C.4.

BRENTFORD. — STAND. — The Brentford Football Sports Club, Ltd., are having plans prepared for a large double-decker stand with accommodation under, to be erected on the Ealing-road frontage. The plans are in the hands of Messrs. Dodge and Reid, 72, High-street, Brentford.

BRIXTON-ROAD. — EXTENSIONS.—Plans have been approved by the L.C.C. for an extension at the premises of the Bonanza Stores, Nos. 439-447.

BRIXTON-ROAD. — PUBLIC-HOUSE.—The Wenlock Brewery Co., Ltd., Wenlock-road, Islington, N.1, propose to build a public-house, to be called the "Prince of Wales," at £30,000. The architect is Mr. Joseph Hill, F.R.I.B.A., 34, Gordon-square, W.C.1. No contracts placed.

CAMDEN TOWN.—HALL.—The Roman Catholic Church is to build a hall and classrooms in Seaton-street and Stanhope-street, N.W.1. The contractors are Messrs. George Bollom and Sons, Ltd., 1A, Essex-road, Acton, W.3. The architect is Mr. Thomas H. B. Scott, F.R.I.B.A., 110, Horseferry-road, S.W.1.

CROYDON. — EXTENSION. — The C.B. has approved plans submitted by Mr. W. Howard Price, Ltd., 25, Lower Coombe-street, for flock store extensions at 25-31, Lower Coombe-street.

CROYDON.—ADDITIONS.—Messrs. Mouldrite, Ltd., Factory-lane, are to extend their premises at Factory-lane, Broad Green.

EALING.—HOUSES.—The T.C. has now approved plans by the Borough Surveyor for 28 flats, in two stories, at the corner of Ruislip-road and Perivale-road.

EALING.—COTTAGES.—The T.C. has decided to build 12 cottages for old people on a part of the Dibdin House site, Hanger-lane. Tenders for the work are to be invited from approved firms.

EAST HAM.—REBUILDING.—The C.B. has approved plans submitted by Mr. S. A. S. Yeo, A.R.I.B.A., Station-chambers, 56, Turnmill-street, E.C.1, for the rebuilding of the "Roman Inn" public-house, Roman-road.

EDMONTON.—LIBRARY.—The U.D.C. are inviting tenders for proposed branch library, maternity and child welfare centre, and public convenience at Weir Hall.

FINCHLEY. — FLATS. — Are now being erected in Lyttleton-road, near Lyttleton-court. The work is being carried out by Mr. H. Brown, who has an office on the site.

FINSBURY.—CENTRE.—The B.C. has recommended the tender of Messrs. Patman and Fotheringham, Ltd., 15, Park-street, Islington, N.1, for the new health centre on the Vineyard-gardens site, at £44,609. Messrs. Tecton, 57, Haymarket, S.W.1, are the architects.

GREENFORD.—ADDITIONS.—Are to be made to the factory premises, in Wadsworth-road, of Messrs. Pond's Extract Co., Ltd.

GREENFORD. — LABORATORY. — Is to be erected in Greenford-road for Messrs. Joseph Nathan and Co., Ltd. The architects are Messrs. Wallis Gilbert and Partners, 15, Elizabeth-street, S.W.1.

GREENFORD. — FACTORY.—Messrs. Percy Bilton Properties, Ltd., 113, Park-street, W.1, have prepared plans for the proposed erection of a factory and offices in Aintree-road for Messrs. Superfluxes, Ltd.

HAMPSTEAD.—FLATS.—A block of about 25, high-class flats is to be built in Frognall-lane and Bracknell-gardens, N.W. The contractors are Messrs. J. Laing and Son, Ltd., Mill Hill, N.W.7. The architect is Mr. Brian L. Sutcliffe, F.R.I.B.A., 5, Manchester-square, W.1.

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HARROW.—OFFICE.—H.M.O.W. are inviting tenders for a new canteen at H.M. Stationery Office.

HESTON.—SCHOOL.—The Heston and Isleworth T.C. are inviting tenders for an infants' school (400 places) at Springwell-road. Mr. J. G. Carey, Assoc.M.Inst.C.E., Borough Surveyor, has prepared the plans.

HOLBORN.—BUILDING.—Mr. K. H. Wachter, 32, Argyll-square, W.C., architect for the new baths to be erected in Endell-street, is to be instructed to erect a porter's lodge, etc., on part of the Christ Church site, which is then to be incorporated with the baths rebuilding scheme.

HYDE PARK. — BUILDINGS.—New police buildings are to be erected in Hyde Park for H.M.O.W. A contract has been placed with Messrs. Higgs and Hill, Ltd., 14, Godliman-street, E.C.4.

ILFORD. — BRANCH.—Messrs. Montague Burton Estates, Ltd., Hudson-road Mills, Leeds, have decided to build a branch showrooms, with a billiards-hall above, in Green-lane. Plans have been prepared by the company's architect, Mr. Nathaniel Martin, L.R.I.B.A.

ILFORD.—HOUSES.—Messrs. P. G. Ashton and Son, 1, High-street, Chadwell Heath, have prepared plans for 61 houses in Fowey-avenue and Falmouth-gardens.

LAMBETH.—REBUILDING.—Plans have been prepared by Mr. Stanley Towse, F.R.I.B.A., 9, Newcomen-street, S.E.1, for the rebuilding of the "Oxford Arms" public-house in Westminster Bridge-road, S.E. No contracts placed.

LEYTON.—REBUILDING.—The "Lion and Key" Hotel in the High-street is to be rebuilt to the plans of Mr. R. J. L. Slater, 199, Plashet-grove, E.6. The contract has been placed with Messrs. Clemens Bros., Ltd., 77, Derby-road, Forest Gate, E.7.

LONDON.—BUILDING.—The L.C.C. are to erect a new school in Oldhill-street, Hackney, at £51,430. Winstanley-road school, Battersea, is to be rebuilt at £38,730 for the Council. A sum of £4,875 to be spent on gymnasium at Raine's Foundation girls' school at Mile End, and £3,000 on a gymnasium at the South-East London Day Continuation school, Deptford. A scheme of 229 dwellings are recommended in the Savona-street areas, Battersea, by the Council at £123,800. The Housing and Public Health Committee propose the acquisition and clearance, at a cost of approximately £14,000, of over 1¼ acres of slum area in Albany-road, Camberwell. The scheme will involve the rehousing of about 120 working-class persons, at £13,500. It is proposed that, after clearance, the site shall be conveyed to the Camberwell Metropolitan Borough Council for housing redevelopment. The Committee also recommend the Council to acquire and clear, at £50,000, about seven acres in extent in the neighbourhood of East-street, Greenwich. About 830 persons will be displaced, and the estimated cost of rehousing these persons is £93,000. As the land is not suitable for rehousing development, it is proposed that, after clearance, the area shall be used primarily for the reinstatement of industry disturbed by the Council's operations. A new wing and alterations to the nurses' home at Caterham hospital is to be erected by Messrs. W. H. Gaze and Sons, Ltd., Kingston, at £21,983. £15,010 is also to be spent on the provision at Caterham hospital of a special unit.

LOUGHTON.—SCHOOL.—The Essex C.C. are inviting tenders for a council senior school. Mr. J. Stuart, F.R.I.B.A., County Architect, has prepared the plans.

MILL HILL.—FLATS.—Plans have been prepared by Mr. R. G. Cox, L.R.I.B.A., 60A, High-street, Acton, W.3, for a block of flats in Abercorn-road, N.W.7.

MITCHAM.—ADDITION.—Messrs. Philips Industrial, Ltd., 145, Charing Cross-road, W.C., have prepared plans for additional factory premises. The contractors are Messrs. Holst and Co., Ltd., 1, Victoria-street, S.W.1.

MORDEN.—FLATS.—Messrs. G. E. Clare and Son, 15, College-road, Harrow, have prepared plans for the development of a site at the junction of Central-road and Farm-road for 51 flats.

MORTLAKE. — CREMATORIUM.—A sketch plan of the proposed crematorium to be built by the Mortlake Crematorium Board was provisionally approved at the meeting of the Board.

PALL MALL. — OFFICES. — Messrs. Coles Demolition and Excavation, Ltd., 174, Twickenham-road, Isleworth, are demolishing premises at Nos. 23 and 24 and 27, 28 and 29, St. James's-square, S.W.1. New offices are to be erected on the site from plans prepared by Messrs. Wimperis, Simpson and Guthrie, FF.R.I.B.A., 61, South Molton-street, W.1. The quantity surveyors are Messrs. Ainsley, 3 and 4, Portsmouth-street, W.C.2.

REGENT'S PARK.—BARRACKS.—The County of London Territorial Army and Air Force Association proposes to build large headquarters, barracks, and drill-hall in Albany-street, N.W.1, for the Anti-Aircraft Royal Engineers. Plans are being prepared by Messrs. W. G. Newton and Partners, Raymond-buildings, Gray's Inn, W.C.1.

REGENT'S PARK-ROAD. — FLATS.—Plans have been prepared by Mr. Arnold A. Higuer, 1, Montague-street, W.C.1, for a block of 17 flats, with seven shops on the ground floor.

RUISLIP. — BUILDING.—The Council has approved plans for 15 pairs of semi-detached houses at Rodney-gardens, Eastcote, for Messrs. Comben and Wakeling, builders; 166 pairs of semi-detached houses at Eastcote Estate for Mr. A. C. Cowtan, builder; and 76 flats off West End-road, 76 bunaglows and 94 flats off West End-road, near Glebe-avenue, for the Malborough Securities, Ltd.

SHOREDITCH.—EXTENSION.—The B.C. has accepted the tender of Messrs. R. Schooley and Son, of 5, Market-street, Finsbury, amounting to £33,350, for the erection of an extension of the Town Hall, and the tender of the same firm, amounting to £5,230, for the Haggerston Library extension.

SOHO-SQUARE. — REBUILDING. — Messrs. Gordon Jeeves and Partners, 16, Hanover-square, W.1, are the architects, and Messrs. Higgs and Hill, Ltd., Crown-works, South Lambeth-road, S.W.8, are the builders for the rebuilding of Nos. 31 and 32, and 67, Frith-street. The demolition work is to be carried out by the London Demolition Co., Ltd., London-road, Isleworth.

SOUTHAMPTON-ROW. — ALTERATIONS.—And improvements are to be made to the Bedford Hotel for the owners, Messrs. Watney, Combe, Reid and Co., Ltd., Stag Brewery, S.W.1. The brewery architect is Mr. A. W. Blomfield, F.R.I.B.A.

STOKE NEWINGTON. — PREMISES. — Messrs. E. Pollard and Co., Ltd., 159, St. John-street, E.C.1, are to erect a new building at 75, High-street. The plans have been prepared by the firm.

TWICKENHAM. — FLATS. — Mr. E. D. Griffith, 34, Wilton-place, S.W.1, is the architect for the proposed erection of 24 flats in Whitton-road.

WELLING. — PREMISES. — Messrs. W. Loweth and Sons, Ltd., 67, Downs Park-road, E.8, are the contractors for the rebuilding of the "Duchess of Edinburgh" public-house. The plans have been prepared by Messrs. Nowell Parr and Son, 42, Cranley-gardens, S.W.7.

WESTMINSTER BRIDGE-ROAD. — WAREHOUSE.—Messrs. T. P. Headland, Ltd., 1A, Pearman-street, S.E.1, are to build a warehouse at Nos. 164-168, to the plans of Mr. S. B. Pritlove, F.R.I.B.A., 6, Denman-street, W.1. The contractors are Messrs. Griggs and Son, Ltd., 100, Victoria-street, S.W.1.

WILLESDEN.—SYNAGOGUE.—The Willesden Green Hebrew Congregation is to erect a new synagogue, etc., at Heathfield Park, Willesden Green, N.W. The contract has been placed with Messrs. Pitchers, Ltd., 57, Ashburton-grove, Holloway, N. The plans are by Messrs. Wills and Kaula, 22, Southampton-street, W.C.1.

PUBLIC WORKS

BELFAST.—The Belfast Harbour Board has awarded the contract for the erection of the new city aerodrome to Messrs. Harland & Wolff, Ltd.—More than a dozen new schools are to be built in Northern Ireland during the next twelve months. Public works by the Belfast Corporation are to include the roofing of the city markets as an exhibition hall at a cost of £32,000. Plans have been passed for 500 new houses.

CLYDESIDE.—Scottish Industrial Estates, Ltd., are to establish a trading estate at North Hillington, Renfrew, on which as a first step 30 unit factories will be erected. The general manager is Mr. D. Sinclair Hay, 41, St. Vincent-place, Glasgow. The company is promoted and financed by the Commissioner for the Special Areas in Scotland. Sir David Allan Hay.

DURHAM.—A sum of £50,000 is to be spent on work schemes at Wallsend, West Hartlepool, Sunderland, Lanchester, and Houghton-le-Spring, which have been provisionally approved for grants by the Commissioner for the Special Areas. The maternity buildings at Wallsend Infirmary are to be extended at a cost of £10,300, and other schemes include construction of a pavilion for tuberculosis patients at West Hartlepool, costing £7,000; construction of new sewers at Sunderland to cost £10,000; drainage scheme for Hartlepool, £18,000 (75 per cent. grant); and two sanitary schemes at Lanchester and Houghton-le-Spring, total cost £4,600.

GREAT BRITAIN.—Among the contracts advertised in this issue by local authorities as being open to tender are :—Braughing R.D.C.—22 houses on 6 sites; Leicester T.C.—400 houses at Braunstone; Manchester T.C.—974 houses and 16 shops, etc., at Booth Hall Estate, Blackley; Bristol T.C.—1,000 houses on the Knowle West and Southmead Housing Estate; Warwick C.C.—School at Stratford-on-Avon; and Middlesex C.C.—Extensions to Chase Farm Institution, The Ridgeway, Enfield.

HOVE.—Hove T.C. is to set in hand a scheme for erecting two swimming baths, underground car park, café, dance hall and garden on the site of the gravel pit on the front. Plans, which are estimated to cost £140,000 to execute, have been prepared by the Borough Surveyor's Department.

KIRKCALDY.—Instead of a competition, the Provost's Committee of Kirkcaldy Town Council are recommending the appointment as architect for the new civic buildings of Mr. Thomas Tait, London, who has prepared preliminary reports and plans of a scheme. The recommendation will come before a special meeting of the Town Council to be held shortly.

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LUTON.—The L.M.S. Railway is to carry out a £47,600 scheme for the remodelling of Luton passenger station. A feature of the scheme is provision for a new high level booking-office with access from the public footbridge which crosses the station. The parcels office, waiting-room accommodation and refreshment rooms will all be enlarged and improved, and car parking facilities will be provided.

RHYL. — Messrs. Bradshaw Gass and Hope, FF.R.I.B.A., 19, Silverwell-street, Bolton, are to prepare plans of a reconstruction scheme for Rhyl Town Hall and Council offices.

NEW CINEMAS

BARNSTAPLE.—The tender of Messrs. Pert Bros., Lower Balmain-street, Montrose, has been accepted for the erection of a cinema for Regal (Barnstaple), Ltd. The building will seat about 800 persons and has been designed by Messrs. Orphoot, Whiting and Lindsay, 21, High-street, Bideford.

BLAYDON-ON-TYNE. — A cinema is to be built at Winlaton, for Mr. J. H. Fisher, Old Well-lane, Winlaton. The architect is Mr. Robert Burke, Singleton House, Northumberland-street, Newcastle-on-Tyne. No contracts let.

BRADFORD. — The Undercliffe Picture House Co., Ltd., are to erect a cinema at Dudley Hill-road, Undercliffe. The architects are Messrs. Illingworth and Son, 15, Sunbridge-road, Bradford.

ERITH.—Odeon Theatres, Ltd., Cornhill House, Bennetts-hill, Birmingham, have accepted the tender of Messrs. Leightons (Contractors), Ltd., Evelyn House, Oxford-street, W.1, for the erection of the Odeon Cinema. The architect is Mr. George Coles, F.R.I.B.A., 40, Craven-street, W.C.2.

HARROW.—Bernstein Theatres, Ltd., 36, Golden-square, W.1, are to erect a cinema at the corner of Sheepcote-road and Bonnersfield-lane.

HEREFORD.—Mr. Herbert Skyrme, 138, Widemarsh-street, Hereford, has prepared plans for alterations to the Palladium Theatre.

LUTON.—Plans have been approved for the erection of a cinema and three shops at Marsh-road, Seagrave, for Mr. W. Southan Morris. The architect is Mr. F. E. Tasker, A.I.A.S., 22, Old Buildings, Lincoln's Inn, W.C.2.

SNODLAND.—Messrs. Ward's Theatres, Ltd., Kent House, 87, Regent-street, W.1, propose to erect a cinema with seating for about 750 persons. Plans have been prepared by Messrs. W. R. Hindmarsh and Co., 203, High-street, Eltham, S.E.9. No contracts let.

WALSALL.—There are planned cinema, café and six shops at Birmingham-road and Newton-road, Great Barr, for Messrs. Clift and Salberg, West Mount, Vicarage-road, Edgbaston, Birmingham. The architect is Mr. R. Satchwell, 6, New-street, Birmingham. Messrs. Percy Cox, Ltd., Grove-lane, Handsworth, Birmingham, have secured the contract.

THE KINEMATOGRAPH YEAR BOOK

THE twenty-fourth (1937) edition of the Kinematograph Year Book, now issued*, is a publication which, while of primary interest to the cinematograph exhibitor and renter, is of very considerable value to those engaged in the design and construction of cinemas. In particular, attention may be drawn to a comprehensive section, by Mr. A. L. Carter, on the Equipment and Technique of the Modern Cinema, in which the trend of the industry is traced and full details given of its effects upon design and equipment—information which is essential to architects who plan cinemas. Other useful sections are the Classified Trade Directories—in which a list of architects and specialists is included; digests of all Acts concerned with the industry; and notes of important legal decisions. Other sections of more general interest are classified lists of all circuits and cinemas, foreign and colonial trades directory, and a list of all trade organisations.

* Kinematograph Publications, Ltd., 93, Long Acre, W.C.2. Price 10s.

RATES OF WAGES IN THE BUILDING TRADE

AS AND FROM 1st FEBRUARY, 1937.

[Every endeavour is made to ensure accuracy, but we cannot be responsible for errors.]

	Crafts-men.	Lab-ourers.
Aberavon	1/7	1/2½
Aberdare	1/6½	1/2
Abergavenny	1/6½	1/2
Abingdon	1/5½	1/1½
Accrington	1/7	1/2½
Aldeburgh	1/3	11½
Aldershot	1/5	1/0½
Alfreton	1/7	1/2½
Alnwick	1/6½	1/2
Altrincham	1/7	1/2½
Amble	1/6½	1/2
Amersham	1/5½	1/1½
Ammanford	1/7	1/2½
Andover	1/5	1/0½
Ardingley	1/5	1/0½
Arundel	1/5	1/0½
Ascot	1/5	1/0½
Ashby-de-la-Zouch	1/5½	1/1½
Ashford (Kent)	1/4½	1/0½
Ashford (Middlesex)	1/7	1/2½
Ashington	1/6½	1/2
Ashstead	1/7	1/2½
Ashton-under-Lyme	1/7	1/2½
Aylesbury	1/5	1/0½
Aylsham	1/4	1/-
Bagshot	1/5	1/0½
Banbury	1/5	1/0½
Barnsley	1/7	1/2½
Barnstaple	1/5	1/0½
Barrow-in-Furness	1/7	1/2½
Barry	1/7	1/2½
Basingstoke	1/5	1,0½
Bath	1/6	1/1½
Batley	1/7	1/2½
Beaconsfield	1/5½	1/1½
Beccles	1/3½	11½
Bedford	1/6	1/1½
Berkhamsted	1/4½	1/0½
Berwick	1/6	1/1½
Beverley	1/7	1/2½
Bexhill-on-Sea	1/5	1/0½
Bideford	1/5	1/0½
Biggleswade	1/4½	1/0½*
Billericay	1/4½	1/0½
Birchington	1/4½	1/0½
Birkenhead	‡§1/8½	¶
Birmingham	1/7	1/2½
Bishop Auckland	1/6½	1/2
Bishops Stortford	1/5½	1/1½
Blackburn	1/7	1/2½
Blackpool	1/7	1/2½
Blyth	1/7	1/2½
Bognor Regis	1/5	1/0½
Bolton	1/7	1/2½
Bournemouth	1/6	1/1½
Bracknell	1/5	1/0½
Bradford	1/7	1/2½
Bradford-on-Avon	1/4*	1/-
Braintree	1/5	1/0½
Brentwood	1/6½	1/2
Bridgwater	1/5	1/0½
Bridlington	1/6½	1/2
Brighouse	1/7	1/2½
Brighton	1/6	1/1½
Bristol	1/7	1/2½
Broadstairs	1/4½	1/0½
Bromsgrove	1/6	1/1½
Buckley	1/7	1/2½
Bungay	1/3	11½
Burnham-on-Crouch	1/3½	11½
Burnley	1/7	1/2½
Burslem	1/7	1/2½
Burton-on-Trent	1/7	1/2½
Bury	1/7	1/2½
Bury St. Edmunds	1/4½	1/0½
Buxton	1/6½	1/2
Byfleet	1/5½	1/1½
Cambridge	1/6½	1/2
Canterbury	1/4½	1/0½
Cardiff	1/7	1/2½
Carlisle	1/7	1/2½
Carnforth	1/7	1/2½
Castleford	1/7	1/2½
Caterham	1/7	1/2½
Chard	1/4*	1/-
Chatham	1/5½	1/1½
Chelmsford	1/5½	1/1½
Cheltenham	1/5½	1/1½
Chepstow	1/6	1/1½
Chertsey	1/6	1/1½
Chester	1/7	1/2½
Chesterfield	1/7	1/2½
Chichester	1/5	1/0½
Chorley	1/7	1/2½
Cirencester	1/4½*	1/0½
Clacton	1/5	1/0½
Cleveleys	1/7	1/2½
Clitheroe	1/7	1/2½
Cobham (Surrey)	1/6	1/1½
Colchester	1/6	1/1½
Colwyn Bay	1/6	1/1½
Congleton	1/6½	1/2
Coventry	1/7	1/2½
Cranbrook	1/4½	1/0½
Cranleigh	1/5	1/0½
Crawley	1/5	1/0½
Crewe	1/6	1/1½
Cromer	1/4	1/-
Crowborough	1/5	1/0½
Cuckfield	1/5	1/0½
Darlington	1/7	1/2½
Darwen	1/7	1/2½
Daventry	1/5½	1/1½
Deal	1/4½	1/0½
Denbigh	1/5½	1/1½
Derby	1/7	1/2½
Devizes	1/3½*	11½
Dewsbury	1/7	1/2½
Didcot	1/5	1/0½
Diss	1/3½	11½
Doncaster	1/7	1/2½
Dorchester	1/4½*	1/0½
Dorking	1/5½	1/1½
Dover	1/4½	1/0½
Dovercourt	1/5	1/0½
Driffield	1/5½	1/1½
Droitwich	1/6	1/1½
Dudley	1/7	1/2½
Dunstable	1/5	1/0½
Durham City	1/7	1/2½
Eastbourne	1/6	1/1½
E.Glam.(Mon.Val.)	1/6½	1/2
East Grinstead	1/5	1/0½
Edenbridge	1/5	1/0½
Ely	1/3½	11½
Epping	1/7	1/2½
Exeter	1/6†	1/1½
Exmouth	1/5	1/0½
Fakenham	1/3½	11½
Falmouth	1/5½	1/1½
Fareham	1/6	1/1½
Faversham	1/4½	1/0½
Felixstowe	1/5½	1/1½
Filey	1/5½	1/1½
Fleetwood	1/7	1/2½
Flint	1/6½	1/2
Folkestone	1/4½	1/0½
Frinton-on-Sea	1/5	1/0½
Frome	1/4*	1/-
Gainsborough	1/6	1/1½
Gateshead	1/7	1/2½
Gillingham (Kent)	1/5½	1/1½
Glossop	1/7	1/2½
Gloucester	1/6†	1/1½
Godalming	1/5	1/0½
Goole	1/7	1/2½
Gosport	1/6	1/1½
Grantham	1/5½	1/1½
Gravesend	1/6½	1/2
Great Yarmouth	1/5	1/0½
Grimsby	1/7	1/2½
Guildford	1/5	1/0½
Guilsborough	1/5½	1/1½
Halifax	1/7	1/2½
Hanley	1/7	1/2½
Harpenden	1/5½	1/1½
Harrogate	1/7	1/2½
Hartlepools	1/7	1/2½
Harwich	1/5	1/0½
Haslemere	1/5	1/0½
Hastings	1/5	1/0½
Hatfield	1/6	1/1½
Haywards Heath	1/5	1/0½
Hednesford	1/6½	1/2
Hemel Hempstead	1/6	1/1½
Henley-on-Thames	1/5	1/0½
Hereford	1/5*	1/0½
Herne Bay	1/4½	1/0½
Hertford	1/6	1/1½
Heysham	1/7	1/2½
Hitchin	1/5½	1/1½
Hoddesdon	1/6	1/1½
Holt (Norfolk)	1/3	11½
Horley	1/5	1/0½
Horsham	1/5	1/0½
Horwich	1/7	1/2½
Huddersfield	1/7	1/2½
Hull	1/7	1/2½
Hunstanton	1/3½	11½
Huntingdon	1/4	1/-
Ilfracombe	1/5	1/0½
Ingatestone	1/5	1/0½
Ipswich	1/6	1/1½
Isle of Thanet	1/4½	1/0½
Isle of Wight	1/4	1/-
Keighley	1/7	1/2½
Kenilworth	1/7	1/2½
Kettering	1/6½	1/2
Kidderminster	1/6	1/1½
King's Lynn	1/4½	1/0½
Kirkham	1/7	1/2½
Knowle	1/6½	1/2
Lancaster	1/7	1/2½
Leamington	1/6½	1/2
Leatherhead	1/6	1/1½
Leeds	1/7	1/2½
Leicester	1/7	1/2½
Leighton Buzzard	1/4	1/-
Letchworth	1/5½	1/1½
Lewes	1/5	1/0½
Lichfield	1/6	1/1½
Lincoln	1/7	1/2½
Littlehampton	1/5	1/0½
Liverpool	‡§1/8½	¶
Llandudno	1/6	1/1½
Llanelly	1/7	1/2½
London		
12 m. radius	1/8½*	1/3½
12-15 m. radius	1/8*	1/3
Long Eaton	1/7	1/2½
Longton	1/7	1/2½
Loughborough	1/7	1/2½
Louth	1/5½	1/1½
Lowestoft	1/5	1/0½
Luton	1/6½	1/2
Macclesfield	1/6½	1/2
Maidenhead	1/5½	1/1½
Maidstone	1/5½	1/1½
Malvern	1/5½	1/1½
Manchester	1/7	1/2½
Manningtree	1/3½	11½
Mansfield	1/7	1/2½
March	1/4	1/-
Margate	1/4½	1/0½
Market Harborough	1/6	1/1½
Matlock	1/5½	1/1½
Melton Constable	1/3	11½
Melton Mowbray	1/6	1/1½
Merthyr Tydfil	1/6½	1/2
Middlesbrough	1/7	1/2½
Middleton	1/7	1/2½
Middlewich	1/6	1/1½
Milford Haven	1/5	1/0½
Morecambe	1/7	1/2½
Morley	1/7	1/2½
Mundesley	1/4	1/-
Nantwich	1/6	1/1½
Nelson	1/7	1/2½
Newark-on-Trent	1/6	1/1½
Newbury	1/5	1/0½
Newcastle-on-Tyne	1/7	1/2½
Newcastle-u-Lyme	1/7	1/2½
New Forest	1/4	1/-
Newmarket	1/5	1/0½
Newport, Mon.	1/7	1/2½
Newport Pagnell	1/5	1/0½
Northampton	1/7	1/2½
Norwich	1/6½	1/2
Nottingham	1/7	1/2½
Nuneaton	1/7	1/2½
Oakham	1/5½	1/1½
Oldham	1/7	1/2½
Ormskirk	1/7	1/2½
Oxford	1/6½	1/2
Oxted	1/5½	1/1½
Paignton	1/6½	1/2
Peterborough	1/6½	1/2
Plymouth	1/7†	1/2½
Pontefract	1/7	1/2½
Pontypridd	1/6½	1/2
Portsmouth	1/6	1/1½
Port Talbot	1/7	1/2½
Preston	1/7	1/2½
Pulborough	1/5	1/0½
Ramsgate	1/4½	1/0½
Reading	1/6	1/1½
Redditch	1/6	1/1½
Redhill	1/5½	1/1½
Reigate	1/5½	1/1½
Retford	1/5½	1/1½
Rickmansworth	1/6½	1/2
Ripon	1/5½	1/1½
Rochdale	1/7	1/2½
Rochester	1/5½	1/1½
Rugby	1/7	1/2½
Saffron Walden	1/3½	11½
St. Albans	1/6½	1/2
St. Helens	1/7	1/2½
St. Neots	1/4	1/-
Salisbury City	1/4*	1/-
Salisbury Plain	1/4*	1/-
Sawbridgeworth	1/5	1/0½
Saxmundham	1/3	11½
Scarborough	1/6½	1/2
Scunthorpe	1/7	1/2½
Selby	1/7	1/2½
Sevenoaks	1/5½	1/1½
Sheerness	1/4½	1/0½
Sheffield	1/7	1/2½
Shipley	1/7	1/2½
Shoeburyness	1/6½	1/2
Shoreham	1/6	1/1½
Shrewsbury	1/6	1/1½
Sittingbourne	1/4½	1/0½
Skegness	1/6	1/1½
Sleaford	1/5½	1/1½
Slough	1/6	1/1½
Southampton	1/6	1/1½
Southend-on-Sea	1/6½	1/2
Southport	1/7	1/2½
South Shields	1/7	1/2½
Spalding	1/4½	1/0½
Stafford	1/6½	1/2
Staines	1/6	1/1½
Stamford	1/5½	1/1½
Stevenage	1,5½	1/1½
Stockport	1/7	1/2½
Stockton-on-Tees	1/7	1/2½
Stoke-on-Trent	1/7	1/2½
Stourbridge	1/6½	1/2
Stourport	1/6	1/1½
Stowmarket	1/3½	11½
Stratford-on-Avon	1/5½	1/1½
Stroud	1/5½†	1/1½
Sunderland	1/7	1/2½
Sutton Coldfield	1/7	1/2½
Swaffham	1/3	11½
Swanage	1/5*	1/0½
Swansea	1/7	1/2½
Swindon	1/5½*	1/1½
Tamworth	1/6½	1/2
Taunton	1/5	1/0½
Tenterden	1/4½	1/0½
Tewkesbury	1/5½*	1/1½
Thetford	1/3½	11½
Thorpe Bay	1/6½	1/2
Todmorden	1/7	1/2½
Tonbridge	1/5½	1/1½
Torquay	1/6½	1/2
Totnes	1/5†	1/0½
Trowbridge	1/4*	1/-
Truro	1/4	1/-
Tunbridge Wells	1/5½	1/1½
Uppingham	1/5½	1/1½
Uttoxeter	1/5½	1/1½
Wakefield	1/7	1/2½
Walsall	1/7	1/2½
Walsden	1/7	1/2½
Walton-on-Naze	1/5	1/0½
Ware	1/6	1/1½
Warminster	1/4*	1/-
Warrington	1/7	1/2½
Warwick	1/6½	1/2
Wellingborough	1/6½	1,2
Wells (Norfolk)	1/3	11½
Welwyn	1/6	1/1½
Welwyn Gar. City	1/7	1/2½
West Bromwich	1/7	1/2½
Westclif-on-Sea	1/6½	1/2
Weston-super-Mare	1/6	1/1½
Weybridge	1/6	1,1½
Weymouth	1/4½*	1/0½
Whitby	1/6	1/1½
Whitstable	1/4½	1/0½
Widnes	1/7	1/2½
Wigan	1/7	1/2½
Wigton	1/5½	1/1½
Willington	1/6½	1/2
Wilmslow	1/7	1/2½
Winchester	1/5	1/0½
Windermere	1/5½	1/1½
Windsor	1/6	1/1½
Wisbech	1/4	1/-
Witham	1/5	1/0½
Woking	1/5½	1/1½
Wokingham	1/5	1/0½
Wolverhampton	1/7	1/2½
Woodbridge	1/4	1/-
Worcester	1/6	1/1½
Workington	1/5½	1/1½
Worksop	1/6	1/1½
Worthing	1/5	1/0½
Wrexham	1/6½	1/2
Wroxham	1/4½	1/-
Wycombe	1/5½	1/1½
Wymondham	1/3½	11½
Yeovil	1/5†	1/0½
York	1/7	1/2½

* Painters 1d. less than other Craftsmen. † Painters ½d. less than other Craftsmen. ‡ Plasterers 1/9.

¶ Tradesmen's Labourers 1/3½. Navvies and General Labourers 1/3.

§ Joiners, Plumbers, Bricklayers, Tilers and Masons receive 2/- per week or 4d. per day Tool Money.

For Building Trade Wages in Scotland see page 501.

CONTRACTS OPEN

For some contracts still open, but not included in this list, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender, that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender, unless stated to the contrary.

The date given is the latest date when the tender, or the names of those willing to submit tenders, may be sent in, the name and address at the end is the person from whom or place where quantities, forms of tender, etc., may be obtained.

Following is a list of abbreviations:—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; Surveyor, S.; Engineer, E.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, etc.

MARCH 1.

Ballycastle.—Lavatory.—At Bayview-rd.; erection of concrete sea wall at Old Dock, Bayview-rd., and filling and levelling of area between wall and Bayview-rd., for U.D.C. Clerk.

Blackpool.—Installation.—Of low-pressure hot-water heating apparatus at Technical College gymnasium, for T.C. B.S.

Blackpool.—Terrazzo Wall Lining.—In changing rooms at Technical College gymnasium block, Montreal-av., for T.C. B.S.

Blackpool.—Terrazzo Wall Lining.—In changing rooms at Tyldesley senior school special subject block, for T.C. B.S.

Brampton.—Gymnasium.—At County Secondary School, for Cumberland E.C. J. Forster, F.R.I.B.A., County Architect, 4, Alfred-st. North, Carlisle. Dep. £1.

Chelmsford.—Council Offices.—In London-rd., for R.D.C. H. H. Gowers, clerk, Council Offices, Waterloo-la.

Chiswick.—Erection.—Of clinics and juvenile employment bureau on Rothschild school site, Brentford, for B.C. L. A. Cooper, L.R.I.B.A. Dep. £5 5s.

Crystal Palace.—Removal.—Of debris from site of Crystal Palace, for Trustees. Sir Douglas Fox & Ptnrs., Broadway-bldgs., London, S.W.1. Charge £1 1s.

Dundee.—Works.—In connection with Mid Craigie housing scheme, second development, for T.C. David B. M'Lay, City Architect, 21, City-sq.

Edinburgh.—Additional Dressing Accommodation.—At Portobello bathing pool, for T.C. City E.

Falmouth.—Extensions.—To District Hospital. Cowell, Drewitt & Wheatly, architects, Mansion House, Truro.

***Fulham.**—Dwellings.—90, at St. James' Home, Fulham Palace-rd., for B.C. B.S. Dep. £2 2s.

Gainsborough.—Erection.—Of wrought-iron fencing on Ropery-rd. housing site, for U.D.C. Stanley Algar, E. and S. Dep. £1 1s.

Grimsby.—Houses.—50, on Nunsthorpe housing site, for T.C. H. Gilbert Whyatt, B.E. and S. Dep. £2 2s.

Hastings.—Houses.—52, on Broomsgrove housing site No. 2, for C.B. B. and Water E. Dep. £2 2s

Hebburn.—Painting Works.—At park, cemetery and hospital, for U.D.C. S.

Ilford.—Steel Construction.—Of Gantshill Cross library, for B.C. B.E.

Marlborough.—Houses.—8, at Mildenhall, for R.D.C. C. Dep. £1 1s.

Matlock.—Dairy.—At Cuckoostone Grange Farm, Matlock Moor, for U.D.C. Joseph Turne, S. Dep. £3 3s.

Northumberland.—Redecorating.—Wallsend police station, for C.C. County Architect, County Hall, Newcastle-upon-Tyne. Dep. £1 1s.

Norwich.—Alterations.—And extensions for remodelling of Thorpe Hamlet junior and infants' schools, St. Leonard's-rd., for T.C. City E. Dep. £2 2s.

Oswestry.—Houses.—50, at 3 sites, for R.D.C. C. B. Barnes, E. and S. Dep. £2 2s.

Shenley.—Installation.—Of heating and domestic hot water supply in Middlesex Colony, section "G," for Middlesex C.C. C. W. Radcliffe, "Y.2," clerk, Guildhall, Westminster, S.W.1. Dep. £2 2s.

Shrewsbury.—Conveniences.—And erection of close-boarded fencing and gates at Gay Meadow; also alterations in adapting premises, 36a, St. Julian's Friars, for use as conveniences, for T.C. A. W. Ward, B.S.

Slough.—Erection.—Of shelter in Stoke-rd. cemetery, for U.D.C. E. and S.

Southall (Middx.).—Houses.—222, on Dane-rd. site, for T.C. T.C.

Stroud.—Alterations.—To Council offices, High-st., for U.D.C. F. S. Cutler, E. and S. Dep. £2 2s.

Todmorden.—Alterations.—At County Poor Law Institution, for West Riding C.C. Percy O. Platts, A.R.I.B.A., West Riding Architect, County Hall, Wakefield.

MARCH 2.

Bradford.—Painting.—At St. James's abattoir, Filey-st., for T.C. City Architect.

Bury.—Houses.—16, in Ivy-rd., Elton, for T.C. B.E. Dep. £2.

Camberley.—Garage.—And lavatory at sewage disposal works, Vale-rd., for Frimley and Camberley U.D.C. R. H. Porteous, E. and S.

Doncaster.—Conveniences.—At Hexthorpe Flatts, for T.C. B.E., 2, Priory-pl.

Dublin.—Cottages.—16, at 6 sites, for Board of Health. Francis P. Russell E., 6, Parnell-sq., Dublin. Dep. £2 2s.

Guildford.—Erection.—Of telephone exchange, sorting office and garage, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Kirkby-in-Ashfield.—Houses.—38 3-bedroom type and 2 4-bedroom type, also construction of roadway on Lane End site, for U.D.C. L. Dodsley, Portland-chambs., Sutton-in-Ashfield. Dep. £2 2s.

Lancaster.—Installation.—Of electricity in 48 houses and two houses and shops on Halton-rd. housing estate, for T.C. Frederick Hill, B.S. Dep. £1 1s.

Mangotsfield.—Erection.—Of brick boundary walls and entrance gates at St. Stephen's-rd. and Lansdown-rd., Soundwell, for U.D.C. S. Dep. £2 2s.

New Hunstanton.—Convenience.—At Hunstanton, for U.D.C. F. Wilkinson, E. and S., Town Hall, Hunstanton. Dep. £1 1s.

Nuneaton.—Houses.—33, at Vernons-ln. estate, for T.C. B.S. Dep. £3 3s.

Startforth.—Houses.—6, at Low Startforth, for R.D.C. W. I. Watson, clerk, 8, Newgate, Barnard Castle. Dep. £2 2s.

Tottenham.—Extensions.—And alterations at Philip-ln. School for Deaf, for E.C. E. C. Harris & Ptnrs., 3, Bedford-sq., W.C.1. Dep. £2 2s.

MARCH 3.

Banbury.—Houses.—24, in Steeple Aston, together with all contingent works, for R.D.C. Arthur Hunt, S., Council Offices, Castle Wharf.

***Braughing.**—Houses.—22, on 6 sites, for R.D.C. C., 2, Hockerill-st., Bishop's Stortford. Dep. £2 2s.

***Enfield.**—Erection.—Of crematorium and cemetery chapels, for Tottenham and Wood Green Burial Board. Stoner & Sons, 69, Lincoln's Inn Fields, W.C.2. Dep. £2 2s.

***Essex.**—Police Houses.—7, at Springfield, and 2, at Wimbish, for C.C. J. Stuart, F.R.I.B.A., Chelmsford. Dep. £1 1s. each.

Kent.—Nursery.—And receiving unit at County Hospital, Pembury, for C.C. County Architect, Maidstone. Dep. £5 5s.

Lincoln.—Erection.—Of dressing accommodation, filter-house, ticket office, etc., at Boultham Baths, for T.C. A. Adlington, City E. and S. Dep. £2 2s.

Mossley.—Decorations.—Of schools, for T.C. B.S.

***Northampton.**—Police Houses.—At Brigstock, Spratton, Walgrave and King's Sutton, for C.C. County Architect.

Southend-on-Sea.—Erection.—Of junior elementary school on Carlton-av. site, Westcliff-on-Sea, for T.C. Frank W. Smith, architect. Dep. £2.

Southport.—Cleaning Down.—And painting bandstand, café, kiosk, lamps, screening, etc., in band enclosure in front of Municipal Buildings, Lord-st., for T.C. B.E. Dep. £1 1s.

Swansea.—Painting.—At University College. Edwin Drew, Registrar, Singleton Park.

Watford.—Houses.—120, on Leavesden Green estate, for B.C. B.E. Dep. £2 2s.

MARCH 4.

Birmingham.—Industrial Laboratories.—And heat treatment shops in Brasshouse Passage, off Broad-st., for T.C. Gas Dept. Dep. £2.

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Cannock.—Houses.—162, at Longford-rd.; 8, at Heat-st., Hednesford; 12, at Mount-st., and 14, at Princess-st., Chadsmoor, for U.D.C. C. Dep. £3 3s.

Cheltenham.—Construction.—Of convenience and incidental work at top of Duck-st., Winchcomb, for R.D.C. E. H. Rosser, S., 14, Imperial-sq.

Deal.—Convenience.—In South-st., for T.C. T. C. Golder, B.E. and S. Dep. £2 2s.

Doncaster.—Houses.—16, off Church-rd., Wadworth, for R.D.C. S.

Manchester.—Erection.—Of 72 residential flats at Wellington-st., Gorton, for T.C. Housing Director. Dep. £2 2s.

Mansfield.—Shops.—And offices, Regent-st., for T.C. Waude Thompson, B.E. and S., Carr Bank. Dep. £2 2s.

Middlesex.—Building.—And engineering works, for C.C. C., Guildhall, Westminster, S.W.1 (quoting reference CL/GP).

Surrey.—Buildings.—At Brookwood Hospital, nr. Woking, for C.C. F. J. Hodgson, L.R.I.B.A., 201, High-st., Guildford. Dep. £3 3s.

Wolverhampton.—Houses.—376, for C.B. B.E. Dep. £2 2s.

MARCH 5.

Holywell.—Alterations.—And extensions to County School, for Flintshire E.C. R. G. Whitley, L.R.I.B.A., County Architect, County-bldgs., Mold. Dep. £5 5s.

Hoylake.—Lay-out.—Of gardens and erection of café and shelters adjoining South-parade, West Kirby, for U.D.C. E. and S. Dep. £2 2s.

Inveraray.—Telephone Repeater Station.—For H.M.O.W. Architect, H.M. Office of Works, 122, George-st., Edinburgh. Dep. £1 1s.

Meath.—Technical Schools.—At Nobber, and extensions at Ceanannus Mor, for Vocational E.C. F. C. Ward, Quantity S., 21, Bachelor's-walk, Dublin. Dep. £5 5s.

Plymouth.—Extensions.—To shelter at The Belvedere, The Hoe, for T.C. City Architect.

Spennymoor.—Houses.—88, at Brewery Fields, and 42 bungalows at Wraith school site, for North Eastern Housing Assoc., Ltd. Hays & Gray, FF.R.I.B.A., 50, Camden-st., North Shields. Dep. £3 3s.

Walsall.—Erection.—Of V.D. clinic at Manor Hospital, Pleck-rd., for T.C. J. Taylor, B.E. and S.

West Sussex.—Erection.—Of school at Selsey for C.C. C. G. Stillman, F.R.I.B.A., Chichester. Dep. £2 2s.

MARCH 6.

Blandford.—Concrete.—Brick and other constructional work in connection with erection of refuse converter at Blandford Forum, Dorset, for T.C. Aubrey J. Allen, F.S.I., Half Moon-st., Sherborne. Dep. £1 1s.

Blyth.—Erection.—Of senior mixed school in Cowpen-rd., Bebside, for T.C. B.E. Dep. £5.

Carlton.—School.—At Cavendish-rd., for Nottinghamshire E.C. County Architect, Shire Hall, Nottingham. Dep. £1 1s.

Flintshire.—Painting.—And repairs to smallholdings near Holywell and Kinnerton, for C.C. J. Harvey Davies, clerk, County-bldgs., Mold.

Halifax.—Switchgear Annexe.—At Lister-st., for T.C. D. T. Lloyd Jones, B.E., Crossley-st. Dep. £1 1s.

Hexham.—Houses.—18, at Corbridge, for R.D.C. C.

Hexham.—Houses.—6, at Haydon Bridge, for R.D.C. C.

Ireland.—Houses.—For Irish Land Commission. M. Deegan, secretary, Upper Merrion-st., Dublin. Dep. £1.

***Kent.**—Erection.—Of school buildings and extensions to existing buildings, for E.C. County Architect, Springfield, Maidstone.

Lewes.—Supply.—And erection of wrought-iron fencing on north-western boundary of housing estate, Landport-rd., for T.C. C. T. Butler, B.S.

Mawnan.—Residence.—Near Helford Passage. Alfred J. Cornelius, F.R.I.B.A., architect, Truro.

Middleton.—Slipper Baths.—In Fountain-st., for T.C. L. Pollard, L.R.I.B.A. Dep. £2 2s.

Penllergaer.—Alterations.—And additions to St. David's Church, for P.C. Thomas Roderick & Sons, architects, Clifton-st., Aberdare. Dep. £2 2s.

Sandbach.—Conversion.—Of closets to water closets in Elworth area, for U.D.C. Arthur M. Skeath, Clerk.

Stafford.—Erection.—Of school at Endon, near Stoke-on-Trent, for C.C. Director of Education. Dep. £5 5s.

MARCH 8.

Coaltown of Balgonie.—Houses.—44, for Fife C.C. G. B. Deas & T. Bertram, L/A.R.I.B.A., Central-chams., Kirkcaldy. Dep. £1 1s.

Conisbrough.—Repai.—Of 9 houses, for U.D.C. S.

Cowes (I.O.W.).—Reconstruction.—Of existing showrooms, 9, Birmingham-rd., for U.D.C. A. E. Smith, E. and S., Northwood House.

Crompton.—Dwelling-houses.—98, on various sites, with drains, fencing, etc., for U.D.C. E. and S., Shaw, Lancs. Dep. £3 3s.

Dagenham.—Central Post Office Garage.—For H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Eastwood.—Houses.—26, on southern side of Newthorpe Common-rd., for U.D.C. A. G. Wheeler, M.I.M.C.E., Public Offices, Church-st.

***Enfield.**—Erection.—Of 2 blocks at Chase Farm Institution, The Ridgeway, for Middlesex C.C. County Architect, 10, Great George-st., Westminster, S.W.1. Dep. £2 2s.

Glamorgan.—Works.—At Trynyrheol infants' school, Llangeinor—new classroom and teachers' room; erection of junior school at Gwauncaegurwen; Tynewydd school, Ogmore Vale—erection of offices, for C.C. D. J. Parry, deputy-clerk, Glamorgan County Hall, Cardiff.

Glanford Brigg.—Houses.—And bungalows at 6 sites, for R.D.C. Chief Sanitary and Housing Inspector, Bigby-st., Brigg. Dep. £2 2s.

Hanmer.—Demolition.—And erection of 11 houses and out-buildings at Old Hall Farm, for Flintshire C.C. R. G. Whitley, L.R.I.B.A., County Architect and S., County-bldgs., Mold. Dep. £2 2s.

Lancashire.—Cleaning.—Scraping and painting of steel bridges and fencing within county, for C.C. C.S. and Bridgemaster, County Offices, Preston.

Mitcham. — Piling. — And reinforced concrete foundations, Lewis-rd. housing estate, and glazing, New Close housing estate, for T.C. B.E. and S.

Newport (I.O.W.).—Pavilion.—At Seaclose, for T.C. G. A. M. Gentry, B.E.

Southend-on-Sea.—Hot Water Installations.—To 11 houses in Ruskin-av for T.C. Robt. H. Dyer, B.E. Dep. £1.

Uttoxeter.—Houses.—14, at Park-av., for U.D.C. S. Dep. £2 2s.

MARCH 9.

Cwmbran.—Houses.—46, on Clarkville housing site, Pontnewydd, for U.D.C. Arthur F. Viney, S. Dep. £2 2s.

Essex.—Erection.—Of council senior school at Loughton, for C.C. J. Stuart, F.R.I.B.A., Chelmsford. Dep. £2 2s.

Etwall (nr. Derby).—Construction.—Of cubicle block, etc., at isolation hospital, for Repton Joint Isolation Hospital Committee. Arthur Eaton & Son, F.R.I.B.A., 6, The Strand, Derby. Dep. £2 2s.

Hitchin.—Electrical Installations.—For 176 houses and flats on Westmill housing estate, for U.D.C. S. Dep. £1 1s.

Newton Mearns.—Postmen's Office.—At Kilmarnock-rd., for H.M.O.W. Architect, H.M. Office of Works, 122, George-st., Edinburgh. Dep. £1 1s.

Stretford.—Showrooms.—In Flixton-rd., Urmston, for District Gas Board. P. Howard, A.R.I.B.A., 88, Mosley-st., Manchester, 2. Dep. £1.

Wakefield.—Camp School.—At Hornsea, for T.C. C. L. Berry, M.A., Director of Education, Education Dept., 27, King-st.

✱**Warwick.**—Erection.—Of senior school at Stratford-on-Avon, for C.C. County Architect. Dep. £2 2s.

✱**West Drayton.**—Erection.—Of mortuary at the Depot, for Yiewsley and West Drayton U.D.C. W. T. Morgan, F.S.I. Dep. £2 2s.

MARCH 10.

✱**Dursley.**—Houses.—20, on Wotton-under-Edge site, for R.D.C. C. Dep. £1 1s.

✱**Dursley.**—Houses.—12, on Uley site, for R.D.C. C. Dep. £1 1s.

Ealing.—Supply.—Delivery and erection of refuse destructor, Greenford, for B.C. F. J. Forty. Dep. £5.

Esher.—Painting.—Of 1 to 60, inclusive, cottages, Northfield-rd., Cobham, for U.D.C. S. Dep. £1 1s.

✱**Lincoln.**—Erection.—Of provision market, Sincil-st., for T.C. R. Atkinson, F.R.I.B.A., 13, Manchester-sq., London, W.1.

Liverpool.—Erection.—Of 48 flats and 13 shops on Fontenoy-st., for T.C. T.C. Dep. £2 2s.

Shoreham-by-Sea.—Erection.—Of brick-built café and groundsman's flat, and incidental works, in Buckingham-pk., for U.D.C. J. Dunn, S. Dep. £1

MARCH 11.

Hunslet.—Houses.—54, at Woodlesford, for R.D.C. W. P. Peters, architect, 89, Albion-st., Leeds, 1. Dep. £2 2s.

MARCH 12.

Berwick-on-Tweed.—Houses.—138, at High Fields housing estate, for T.C. George R. Davidson, B.S. Dep. £3 3s.

Harrow.—Erection.—Of new canteen at H.M. Stationery Office, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Litherland.—Erection.—Of artificial stone dwarf boundary wall and ornamental iron railings and gates to St. Philip's Church and vicarage grounds, Orrel-rd., for U.D.C. Geo. Ponsford, E. and S. Dep. £1 1s.

Maltby Yorks).—Erection.—Of employment exchange, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

MARCH 13.

Liverpool.—Fever Ward Block.—And boiler-house at City Hospital, Fazakerley-annexe, Higher-ln., Fazakerley, for T.C. Land Steward and S. Dep. £2 2s.

Sheffield. — Assembly Hall. — Gymnasium, and alterations to existing buildings, Training College for Teachers; Shirecliffe Council school, senior and junior departments and caretakers' house, for T.C. W. Geo. Davies, F.R.I.B.A., City Architect. Dep. £2.

Wednesbury.—Houses.—58, on Dangerfield-la. site, for T.C. Arthur Booth, B.E. and S. Dep. £5 5s.

Yorkshire.—Works.—At 3 schools, for West Riding C.C. C. Ellison, Education Office, Rock House, Swinton, Mexborough.

MARCH 15.

Ashby-le-la-Zouch.—Houses.—6 non-parlour, 3 bedroom type and 8 parlour, 4 and 5 bedroom type, on Westfield estate, off Burton-rd., for U.D.C. Leonard Swanwick, architect, Temple-chams., Belvoir-rd., Coalville. Dep. £2 2s.

Bakewell.—Houses.—28, together with roads, sewers, gas and water services, etc., at Stanton View, Yeld-rd., for U.D.C. S. Dep. £3 3s.

✱**Cheam.**—Electrical Works.—In connection with Cheam baths, for Sutton and Cheam T.C. B.E. and S. Dep. £2.

✱**Chester.**—Erection.—Of nurses' home at Upton Mental Hospital, for C.C. F. Anstead Browne, F.R.I.B.A. Dep. £2 2s.

Edmonton.—Erection.—Of branch library, welfare centre and public convenience at Weir Hall, for U.D.C. E. Dep. £2 2s.

✱**Huntingdon.**—Erection.—Of police house at Earith, for C.C. T. H. Longstaff, Architect.

✱**Lowestoft.**—Erection.—Of clinic, Southwell-rd., for B.C. S. W. Mobbs, A.R.I.B.A. Dep. £2 2s.

Manchester.—Erection.—Of police house at post office, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

✱**Nottingham.**—Engineering Works.—At laundry, City Institution, 700, Bucknall-rd., for T.C. E. Dep. £2.

Nottingham.—Erection.—Of 4 staff houses on Aston Hall estate, Aston-on-Trent, nr. Derby, for T.C. E. Phillips, Housing Architect, Exchange-bldgs. East. Dep. £1.

✱**Oldbury.**—Additions.—And alterations at Edgmond Hall, Newport (Salop), for B.C. B.S. Dep. £2 2s.

Pontefract.—Alterations.—To nurses' home at County Poor Law Institution, for West Riding C.C. Percy O. Platts, A.R.I.B.A., West Riding Architect, County Hall, Wakefield.

Scunthorpe.—Erection.—Of post office and telephone exchange, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Southend-on-Sea.—Cleaning.—And painting of 38 shelters in various positions on sea front, for T.C. Robt. H. Dyer, B.E. Dep. £1.

Tewkesbury.—Erection.—Of 12 tenements or flats in 3 blocks, for aged persons, for T.C. Walter Ridler, B.S., Station-st. Dep. £1 1s.

Waterloo-with-Seaforth.—Taking Down.—And re-erection of boundary walls and demolition of certain lodges in Crosby-rd. South, Seaforth, for U.D.C. J. R. Fothergill, E. and S., Town Hall, Waterloo, Liverpool, 22. Dep. £1 1s.

MARCH 16.

Athlone.—Houses.—135, in Curragh Mechum, for U.D.C. Owen Doyle, T.S. Dep. £2.

✱**Worksop.**—Erection.—Of telephone exchange, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

MARCH 17.

✱**Heston (Mddx.).**—Infants' School.—At Springwell-rd., for T.C. B.S., Hounslow. Dep. £2 2s.

✱**Leicester.**—Houses.—400, at Braunstone, for T.C. Housing Architect, 18, Highcross-st. Dep. £1 1s.

✱**Manchester.**—Erection.—Of potting shed and substructures for greenhouses at Wythenshawe Park, for T.C. City Architect. Dep. £1 1s.

✱**Wakefield.**—Erection.—Of postal garage, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

MARCH 19.

✱**Bristol.**—Houses.—1,000, in Knowle West and Southmead estates, for T.C. City Eng. Dep. £1.

Canvey Island.—Conveniences.—Offices and incidental works, for U.D.C. C. R. Butcher, E. and S. Dep. £1 1s.

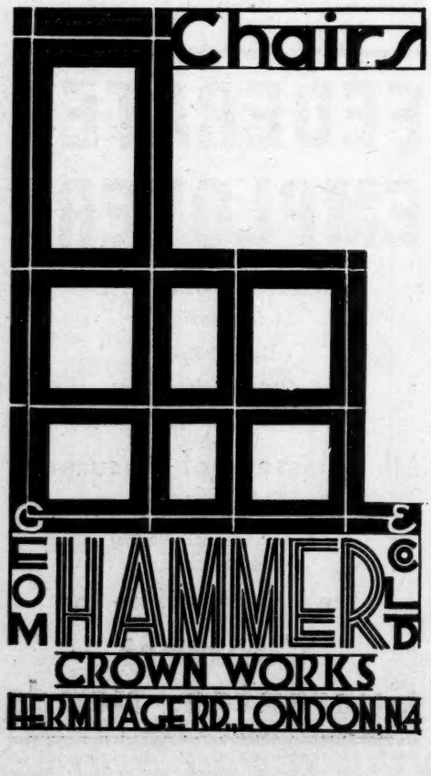
Carrick-on-Suir.—Houses.—107, and works incidental thereto, for U.D.C. M. J. Lonergan, E., Ratherdan, Cashel, Co. Tipperary. Dep. £6 6s.

✱**Essex.**—Erection.—Of Convalescent Villa at Brentwood Mental Hospital, for C.C. J. Stuart, F.R.I.B.A., Chelmsford. Dep. £2 2s.

✱**Fulham.** — Demolition. — Of buildings at electricity works, Townsend-rd., for B.C. B. Treasurer. Dep. £1 1s.

✱**Liverpool.**—Superstructure.—At Airport, Speke, for T.C. Land Steward and S. Dep. £5 5s.

✱**Southampton.**—Erection.—Of new Court Houses; alterations and extensions to existing police station at Fareham, for C.C. C., Winchester. Dep. £1 1s.



Stone.—Houses.—26 non-parlour type, on Red Hill site; one block of 4-bedroomed non-parlour type, off Old-rd.; one pair of semi-detached non-parlour type, at corner of York-st. and Oulton-rd.; and one pair of semi-detached non-parlour type, at corner of York-st. and Old-rd., for U.D.C. G. S. Challacombe, E. and S. Dep. £3 3s.

MARCH 20.

✱**Dorset.**—Installation.—Of low-pressure hot water heating system and hot water supply to extensions at Grammar School, Gillingham, for C.C. C. Dep. £2 2s.

MARCH 22.

Birmingham.—Science Laboratory.—At mortuary, Newton-st., for T.C. H. J. Manzoni, City E. Dep. £3.

Castleford.—Flats.—8, in Lower Oxford-st., for U.D.C. E. and S. Dep. £3 3s.

Guernsey C.I.).—Mental Hospital.—On Le Vauquiédor estate. E. F. Lainé, States' R. Dep. £5 5s.

✱**Sunderland.** — Dwellings. — 12, at Ryhope, for R.D.C. S. Dep. £2 2s.

MARCH 23.

✱**Chichester.**—Houses.—8, at St. Paul's-rd., for T.C. F. C. Nash. Dep. £1 1s.

MARCH 24.

✱**Manchester.**—Houses.—974 and 16 shops on Booth Hall estate, Brackley, for T.C. Housing Director. Dep. £2 2s.

Wardle.—Houses.—38, off Birch-rd.; also carrying out of street works, sewering, etc., for U.D.C. D. Evan Davies, clerk, Council Offices, Wardle-rd., Rochdale. Deps. £2 2s. for houses, and £1 1s. for roads, etc.

APRIL 3.

✱**Newmarket.**—Houses.—30, at Endsleigh-terr., Exning-rd. (site No. 2), for U.D.C. S. Dep. £2 2s.

APRIL 9.

Leyton.—Erection.—Of salvage plant and refuse destructor, for T.C. B.E. and S., Town Hall, E.10. Dep. £2.

APRIL 16.

✱**Durham.**—Erection.—Of 2 secondary schools in Oxbridge-av., Stockton-on-Tees, for C.C. F. Willey, F.R.I.B.A., 34, Old Elvet.

Durham.—Works.—At Boldon Colliery Intermediate School—additional accommodation; Ryhope-st. School, Ryhope—general repairs, for C.C. F. Willey, F.R.I.B.A., 34, Old Elvet.

NO DATE.

✱**Sudbury (Suffolk).**—Erection.—Of 8 houses and 5 bungalows on Wents estate, for B.C. Harold R. Hooper, A.R.I.B.A., 4, Butter-market, Ipswich. Dep. £3 3s.

MATERIALS, etc.

MARCH 1.

Bolsover.—Liquaphalted Limestone.—For U.D.C. W. Veevers, Clerk.

Clayton-le-Moors.—Granite.—And grit setts, for U.D.C. A. Dodgeon, S.

Lancashire.—Cement.—For C.C. P. Schofield, C.S., County Offices, Preston.

Liwchwr.—Bituminous Macadam.—And treated macadam, for U.D.C. F. T. James, S.

Paignton.—Timber.—For U.D.C. E. and S.

Rutland.—Broken Granite.—For Southern Area of C.C. C.S., Ketton, Stamford.

Rutland.—Broken Granite.—For Northern Area of C.C. C.S., Market-pl., Oakham.

Shipley.—Cast-iron Pipes.—For U.D.C. S.

Shrewsbury.—Road Materials.—A. W. Ward, B.S.

Sutton Coldfield.—Chippings.—For T.C. B.S.

Wellingborough.—Granite Kerb.—For U.D.C. E.

MARCH 2.

Limehurst.—Tamacadam.—For R.D.C. S.

Neath.—Tar.—And/or bituminous macadam, for T.C. H. Alex. Clarke, B.E.

Shoreham-by-Sea.—Refined Tar.—For U.D.C. J. Dunn, S.

Twickenham.—Granite.—And granite chippings, for T.C. B.E.

MARCH 3.

Barnet.—Slag Tarmacadam.—For U.D.C. E. and S.

Belper.—Tarred Limestone.—For U.D.C. S.

Morley.—Dry Granite.—And limestone chippings, for T.C. B.E.

Rowley Regis. — Granite. — For T.C. Clifford Buckley, T.C.

MARCH 4.

Atherton.—Flags.—Kerbs and grit setts, for U.D.C. S.

Bebington.—Road Materials.—For U.D.C. L. Birch, E. and S., Brackenwood, Higher Bebington.

Droylsden.—Concrete Flags.—And kerbs, for U.D.C. Frank Schofield, S.

MARCH 5.

Brierley Hill.—Roadstone.—And slag, for U.D.C. R. H. J. Comber, S.

Goole.—Slag.—For R.D.C. S.

Thurrock.—Tarred Slag.—For U.D.C. S.

MARCH 6.

Barking.—Road Materials.—For T.C. R. A. Lay, B.E. and S.

Colchester.—Granite Kerb.—For T.C. B.E.

Ellesmere Port.—Road Metalling.—For U.D.C. E. and S.

Frinton and Walton.—Cement.—For U.D.C. H. W. Holmes, S.

Loughborough.—Granite.—For T.C. W. Granger, B.S.

Mansfield Woodhouse.—Dry Slag.—For U.D.C. Lawrence Walker, S.

Marple.—Granite Macadam.—And chippings, for U.D.C. J. K. Law, Gas and Electricity Manager, Gasworks, Marple Bridge, nr. Stockport.

Newton-in-Makerfield.—Cement.—For U.D.C. S.

Rochdale.—Salt-Glazed Pipes.—For T.C. B.S.

Royton.—Stoneware.—Or earthenware pipes and gullies, for U.D.C. S.

Yiewsley and West Drayton.—Building Materials.—For U.D.C. W. T. Morgan, F.S.I., E. and S.

MARCH 8.

Batley.—Road Materials.—For T.C. B.E.
Bredbury.—Granite Macadam.—For U.D.C. S.
Cuckfield.—Tarmacadam.—For U.D.C. S.
Eastleigh.—Granite Setts.—For T.C. B.E.
Haverhill.—Broken Slag.—For U.D.C. J. H. Clarke, S.
Heston and Isleworth. — Ballast. — Sand and shingle, for B.C. J. G. Carey, B.S., Council House, Hounslow.
Kenilworth.—Granite Chippings.—For U.D.C. S.
Leek.—Flags.—For U.D.C. W. E. Beacham, S.
Widnes.—Portland Cement.—For T.C. James Holt, B.E. and S.
Wrexham.—Macadam.—Setts and kerbs, for T.C. B.E. and S.

MARCH 9.

Batley.—Road Materials.—For T.C. B.E.
Darlington.—Sanitary Pipes.—For T.C. B.S. and Waterworks E.
Leeds.—Granite Setts.—For T.C. W. Vane Morland, General Manager and Chief E.

MARCH 10.

***London.**—Supply.—Of manhole covers, for H.M.O.W. Controller of Supplies, H.M. Office of Works, King Charles-st., S.W.1.
Stevenage.—Granite Concrete Kerb.—And paving, for U.D.C. Reg. A. Gandy, E. and S.
Hale.—Tarred Limestone.—For U.D.C. C. P. Higginbotham, S., Council Offices, Ashley-rd.

MARCH 11.

Urmston.—Tarmacadam.—For U.D.C. E. L. Leeming, T.S.

ENGINEERING, IRON AND STEEL.

MARCH 1.

Walton-le-Dale.—Reconstruction.—Of bridge at Manybrooks, Gregson-ln., Higher Walton, for U.D.C. A. M. R. Wilkinson, S., Council Offices, Bamber Bridge. Dep. £2.
Yorkshire.—Extending.—Span arch bridge carrying Wawne-Sutton-rd. over Foredyke Stream, for East Riding C.C. C.S., County Hall, Beverley. Dep. £1 1s.

MARCH 8.

Lancashire.—Widening.—And strengthening of skew railway bridge over L.M.S. Railway in Heath Charnock, Eye Platt New (County) Bridge, over overflow channel of River Mersey, in Stretford, and Shepley (County) bridge and culvert, over River Tame in Audenshaw, for C.C. C.S., County Offices, Preston.
Moray and Nairn.—Construction.—Of bridge and road diversion at Cawdor, for C.C. P. M'F. Cram, C.S., 6, Court House-ln., Nairn. Dep. £10.

MARCH 11.

Durham.—Construction.—Of reservoir nr. Trimdon Village, for County Water Board. L. G. Mouchel & Partners, Ltd., engineers, 25, New Bridge-st., Newcastle-upon-Tyne, 2. Dep. £2 2s.
Durham.—Construction.—Of reservoir at High Pittington, for County Water Board. L. G. Mouchel & Partners, Ltd., engineers, 25, New Bridge-st., Newcastle-upon-Tyne, 2. Dep. £2 2s.

MARCH 13.

Ammanford. — Reconstruction. — And widening Dyffryn bridge, Tirydail, for Carmarthen C.C. T. W. Wishlade, C.S., The Castle, Carmarthen. Dep. £5.

MARCH 18.

Montgomery.—Construction.—Of reinforced concrete reservoir and water mains, for T.C. S. F. Arthur Long, Consulting E., 4, Queen Anne's Gate, Westminster, S.W.1. Dep. £3 3s.

MARCH 22.

Yorkshire.—Construction.—Of bridge at Malton-rd. gates level crossing, for North Riding C.C. R. Sawtell, C.S., County Hall, Northallerton.

APRIL 15.

Egypt.—Construction.—Of waterworks plant for Fayoum Province, for Egyptian Government. Chief Inspecting Engineers, Egyptian Government, 41, Tothill-st., London, S.W.1. (Dep. £E.10 (£10 5s.).

ROAD, SEWERAGE AND WATER WORKS.

MARCH 1.

Feltham.—Sewerage Works.—In Ashford-rd., for U.D.C. H. W. A. Carter, E. and S. Dep. £2 2s.
Southall.—Construction.—Of roads and sewers, at Dane-rd. housing site, for T.C. B.E. and S.
Stockport. — Excavating. — Sewering, forming, paving, kerbing and flagging part of Lingard-st., for T.C. W. F. Gardner, B.S.
Sunbury-on-Thames.—Making-up.—Broadlands-av., Shepperton, and The Drive, Ashford Common, for U.D.C. A. J. Buttress, E. and S. De. £2 2s.
Taunton. — Construction.—Of sewage disposal works at Bishop's Hull, nr. Taunton, for R.D.C. A. P. I. Cotterell & Son, engineers, 54, Victoria-st., London, S.W.1. Dep. £3 3s.
Weymouth and Melcombe Regis.—Construction.—Of glazed-ware, concrete and cast-iron pipe and tube sewers, relaying and repairs to existing sewers, construction of culvert and two pumping stations and alterations to existing pumping station; also alterations to existing sewage purification works, for T.C. M. G. & R. W. Weekes, engineers, 75, Victoria-st., London, S.W.1. Dep. £5 5s.

MARCH 2.

Farnham.—Making-up.—St. John's-rd., for U.D.C. E. and S.
Knaresborough.—Construction.—Of foul water sewer at Spring-ln., Pannel, for R.D.C. A. E. W. Lupton, E., 14, Bower-rd., Harrogate.
Nailsworth.—Construction.—Of roads and sewers at Forest Green housing estate, for U.D.C. R. Bird, E., Council-chambs., John-st., Stroud. Dep. £2 2s.
Southgate.—Reconstruction.—Of High-st., for B.C. B.E. and S. Dep. £2.
Warwick. — Construction. — Of stoneware pipe sewers, with 42 precast concrete tube manholes, in Whitnash, for R.D.C. S. Douglas, E., 50, Priory-rd., Kenilworth. Dep. £3 3s.

MARCH 3.

Barnsley.—Laying.—Of stoneware pipes, construction of manholes, at Bar-la., Notton. J. R. Wilkinson, L.R.I.B.A., S. and E., 15, Regent-st.
Barnsley.—Replacing.—Of cast-iron water mains in Carlton-rd. area, for R.D.C. J. R. Wilkinson, L.R.I.B.A., S. and E., 15, Regent-st.
Barnstaple.—Construction.—Of one mile of sewers, etc., in Bratton Fleming, for R.D.C. Lemon & Blizard, consulting engineers, 24, Lockyer-st., Plymouth. Dep. £3 3s.
Luton.—Widening.—And surfacing of George-st., for T.C. J. W. Tomlinson, B.E. and S. Dep. £2 2s.
Plymouth.—Construction.—Of concrete roads, with foul and surface-water sewers, for T.C. City E.

MARCH 4.

Southampton.—Making-up.—And re-laying of garden paths to houses on Shirley Warren and Bassett estates, for T.C. Housing Manager, 4, Albion-ter.

MARCH 5.

Abingdon.—Road Rolling.—And scarifying, for T.C. B.S.
Bedford.—Making-up.—Of King Edward-rd. and Queen Alexandra-rd., for T.C. Charles H. Blakeway, B.E. and S.
Coulsdon.—Making-up.—Of Alexander-rd., for Coulsdon and Purley U.D.C. E. and S. Dep. £1 1s.
London.—Paving.—Carriageways and footways of streets in City, for Corporation. City E., Guildhall, E.C.2.
Spennymoor.—Construction.—Of roads and sewers to serve 88 houses at Brewery Fields, and 42 bungalows at Wraith School site, for North Eastern Housing Assoc., Ltd. Hays & Gray, FF.R.I.B.A., 50, Camden-st., North Shields. Dep. £3 3s.

MARCH 6.

Oxfordshire.—Tarspraying.—Of county roads, for C.C. G. T. Bennett, C.S., 8, New-rd., Oxford.

MARCH 8.

Cockermouth.—Sewerage.—Of Goat area, for U.D.C. J. J. Davison, Sandford Fawcett & Pinrs., engineers, 6, King-st., Wigton. Dep. £2 2s.
Hove.—Making-up.—Of roadway in Hove Parkway, for T.C. T. R. Humble, B.S.
King's Lynn.—Laying.—And jointing of water main between Corporation reservoir at Leziate and Memorial at Gaywood, for T.C. J. C. Matthew, B.S. and Waterworks E.
Wisbech.—Laying.—Of water from waterworks company's main in highway to dwellings and pasture on Neatmoor Hall Farm, Nordelph, for Norfolk C.C. T. G. Ellis, F.S.I., 27, Thorpe-rd., Norwich.
Worthing.—Roads.—And sewers on Goring Hall Estate, for Hesketh Estates, Ltd. Wignall & Ainsworth, 20, George V-av., West Worthing. Dep. £2 2s

MARCH 9.

Erith.—Making-up.—Of Norman-rd., Belvedere, for U.D.C. John H. Clayton, E. and S., Council Offices, Erith. Dep. £1 1s.
Erith.—Widening.—And improvement of Brook-st., Erith, for U.D.C. John H. Clayton, E. and S. Dep. £1 1s.
Leyton.—Making-up.—Paving, kerbing, channelling and lighting of Bulwer Court-rd., for T.C. A. P. Howell, B.E. and S., Town Hall, E.10. Dep. £2.
South Cambridgeshire. — Water Scheme.—For Sawston, for R.D.C. Sands & Walker, engineers, Milton-chambs., Nottingham. Dep. £3 3s.
Sutton and Cheam.—Construction.—Of soil sewer in Gander Green-ln., Cheam, for T.C. N. H. Michell, B.E. and S. Dep. £2 2s.

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MARCH 10.

Ealing. — Widening. — Of Ruislip-rd. between Muddy-la. and Down Barns, for Middlesex C.C. C.E., 16, Great George-st., S.W.1. Dep. £5 5s.
Morecambe and Heysham. — Making-up. — Of various streets, for T.C. R. B. Savage, B.S. Dep. 10s. each street.
Newquay.—Levelling.—Paving, metalling, kerbing, channelling and other works in construction of St Thomas'-rd., for U.D.C. C. W. Walters, E. and S. Dep. £3 3s.

MARCH 11.

Skipton.—Construction.—Of sewers, etc., at Linton, for R.D.C. A. Rodwell, E., Rural Council Offices, Granville-st. Dep. £2 2s.

Public Appointments.

MARCH 1.

London.—Town Planning Assistant (Temp.).—For T.C. T.C., Public Health Dept., Guildhall, E.C.2.
Newport (Mon.).—Architectural Assistant.—For C.B. C. F. Ward, F.R.I.B.A.
Wakefield.—Architectural Assistant (Temp.).—For T.C. T.C.

MARCH 2.

Brecon.—Architectural Assistant (Temp).—For C.C. C.
East Suffolk. — Senior Architectural Assistant (Temp.).—For C.C. E. J. Symcox, A.R.I.B.A., Ipswich.
Rochdale.—Clerk of Works (Temp.).—For C.B. B.S.
Widnes, Lancs.—Junior Architectural Assistant (Temp.).—For B.C. B.E. and S.

MARCH 3.

Bristol. — Draughtsman (Temp.). — For E.C. Education Officer.
Leeds.—Two Clerks of Works.—For T.C. R. A. H. Livett, A.R.I.B.A.
***Northampton.**—Clerk of Works.—For E.C. Secretary for Education.
***Poole.**—Consulting Engineer.—For Joint Sanatorium Committee. Clerk, Sunderland.

MARCH 4.

Kingston-upon-Thames. — Architectural Assistant.—For T.C. B.S.

MARCH 5.

Bournemouth. — Assistant Quantity Surveyor.—For C.B. B.E.
***Fulham.**—Architectural Assistant (Temp.).—For B.C. T.C.
Kensington.—Surveying Assistant.—For T.C. T.C.
***Lindsey (Lincs).**—Quantity Surveyor.—For C.C P. W. Birkett, A.R.I.B.A.
***Lindsey (Lincs).**—Junior Architectural Assistant —For C.C. P. W. Birkett, A.R.I.B.A., Lincoln.
***Scarborough.**—Architectural Assistant (Temp.).—For B.C. B. and Water E
***Scarborough.**—Engineering Assistant (Temp.).—For B.C. B. and Water E.

MARCH 6.

***Bolton.**—Two Architectural Assistants (Temp.).—For C.B. Director of Education.
***Oxford.**—Assistant Clerk of Works.—For T.C. City E.

MARCH 8.

***Durham.**—Junior Architectural Assistant and a Clerk (Temp.).—For C.C. F. Willey, F.R.I.B.A.
***East Ham.**—Junior Architectural Assistant (Temp.).—For C.B. B.E.
Gravesend.—Clerk of Works.—For T.C. T.C.
***Hull.**—Junior Architectural Assistant (Temp.).—For T.C. D. Harvey, A.R.I.B.A.
***Nairobi, Kenya.**—Assistant Surveyors; Surveyor's Assistant; Architectural Assistant and Clerk of Works.—For Air Ministry. Secretary (W.B.9). Adastral House, London, W.C.2.
***Stoke-on-Trent.**—Junior Assistant Quantity Surveyor.—For T.C. T.C.
***Stoke-on-Trent.**—Assistant Quantity Surveyor.—For T.C. T.C.
***Wigan.** — Assistant Building Inspector and Trench Inspector.—For C.B.T.C.

MARCH 9.

***Rochdale.**—Architectural Draughtsman (Temp.) —For C.B. B.S.

MARCH 10.

***Southampton.**—Two Junior Draughtsmen.—For C.C. County Architect, Winchester.

MARCH 11.

***Bethnal Green.**—Costing Clerk and Timekeeper (Temp.).—For T.C. T.C.
***Bethnal Green.**—Building Foreman.—For T.C. T.C.

MARCH 12.

***Birkenhead.**—Labour Investigator.—For C.B. T.C.
***Preston.** — Architectural Assistant. — For C.B. B.E.

MARCH 15.

***Hayes (Middx).**—Engineering Assistant.—For Hayes and Harlington U.D.C. E. and S.

NO DATE.

***Newcastle-upon-Tyne.** — Junior Architectural Draughtsman.—For C.C. R. G. Roberts, F.R.I.B.A.
***London.**—Quantity Surveyors (Temp.).—For Air Ministry. Secretary (W.B.9), Adastral House. W.C.2.
***London.**—Heating and Ventilating Draughtsmen (Temp.).—For Air Ministry. Secretary (W.B.9), Adastral House. W.C.2.
***London.**—Clerks of Works.—For Air Ministry. Secretary (W.B.9), Adastral House, W.C.2.
***London.**—Assistant Quantity Surveyors.—For Air Ministry. Secretary (W.B.9), Adastral House, W.C.2.
***Yorks.**—Clerk of Works.—D.C.R.E. Reconstruction, Catterick Camp

TRADE NEWS

Asbestos-Cement Roofings at B.I.F.

At the British Industries Fair, Birmingham, which closes to-day (Friday), Messrs. Turners Asbestos Cement Co. show on Stand Ca.401 many examples of asbestos-cement roofings. Among the larger roofing tiles suitable for industrial purposes are shown the "Turnall" Trafford tiles and the robust "Everite" "Bigsix" asbestos cement corrugated sheets. "Poilite" "Newtone" asbestos-cement slates are also shown in a variety of colours particularly suited to domestic buildings. Decorative wall coverings now made in this material include "Turnall" glazed panels, "Turnall" stipple glaze sheets and "Poilite" decorated sheets. In addition there are specimens of the "Everite" asbestos-cement pressure pipes.

Road Transport Operators.

Of the 460,000 goods vehicles on the roads in this country, 316,600 are operated by concerns with vehicles authorised under the Road and Rail Traffic Act by what are known as "C" licences. This class of transport operator embraces nearly all manufacturers and small tradesmen in the country.

An enlarged number of *Motor Transport*, on sale March 6, has been specially prepared to assist the "C" licence operator, especially so far as keeping costs of operation is concerned, and authoritative articles by experts show how maintenance may be carried out economically, how to keep costs, how to save time and money in loading and unloading, and how to handle insurance matters.

Other articles deal with specialised bodywork, legal requirements for "C" licensed vehicles, a résumé of the Government Inquiry into wages in so far as it affects private carriers, and a forecast of the trend of future legislation.

A Protective Agent Against Rust.

A new and highly effective agent for the combating of rust has recently appeared on the market. Builders have for a long time been dependent on red lead as the chief protection against rust, which, of course, can only be used as a preventative, and thus can only be applied to surfaces previously freed from all traces of rust or which have not so far been exposed to the possibility of corrosion or oxidation.

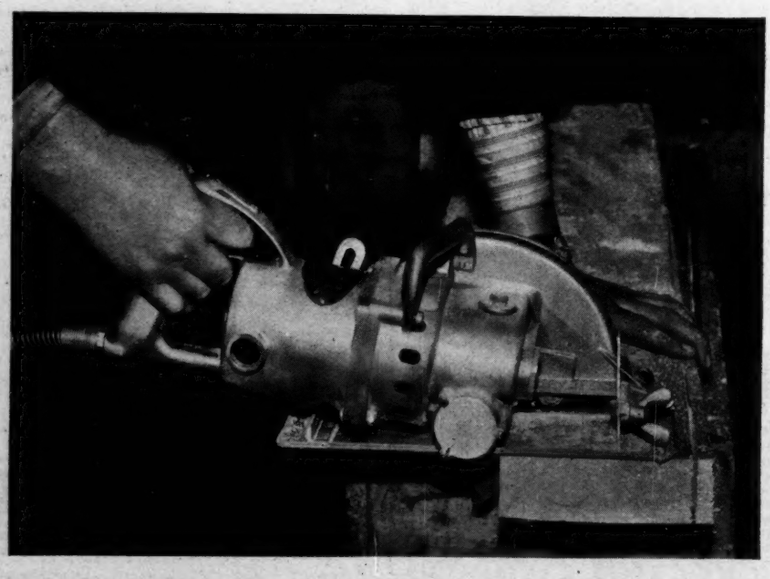
A remarkable feature of this new product is that not only is it applied direct to the rusted surface, but that it actually reacts on the rust itself in such a way as to transform it into an essential part of the protective coating. It is, we are told, a paint with a basis of chlorinated rubber, which is known for its powers of resistance to acids, alkalis and mechanical processes, due to its fine grain and remarkable adhesive qualities. It should thus prove a valuable protective coating for metals used in industries involving exposure to corrosive vapours, as also for those exposed to rain, mist, salt water and other climatic conditions, such as bridges, docks, wireless masts and corrugated iron structures.

The paint is being sold by Messrs. Thomas Parsons and Sons, Ltd., under the name of "Rust-eeter." Messrs. Parsons state further that "Rust-eeter" may be sprayed on as well as applied by brush; it sets to the touch in less than 20 minutes, thus minimising the chances of dust and foreign bodies adhering, and is completely dry within 24 hours. A gallon will cover 400 to 500 sq. ft. An interesting point is that single coats applied in 1932 and placed in unfavourable conditions were, we are informed, still undamaged in 1936, and no trace of corrosion could be detected.

MECHANICAL TOOLS

The British Equipment Co., Ltd., assisted by Messrs. Bosch, Ltd., and the Tarpen Engineering Co., Ltd., gave a demonstration on Friday, February 19, of the "Bosch Hammer," "Skilsaws" and the "Tarpen" portable generator at Ixworth House, South Kensington. The Bosch hammer, which was fully described in an article in this journal for June 21, 1935, has a "Universal" motor operating on both direct current and alternating current, and (with the aid of a portable transformer) on any normal voltage. If work is being carried out where no electric supply is obtainable, the company can supply a portable electric generator with petrol engine. A variety of tools for chasing or boring are supplied with each hammer—a feature of which is that it can be converted from a rotating tool-holder to a non-rotating chisel-hammer merely by changing the tool inset. The "Skilsaw" is a portable saw used for cutting through all kinds of woods, fibre boards, bricks, asbestos, etc., and is capable, we are told, of ripping a 2-in. plank, 12 ft. long, in 40 seconds. These tools can be obtained for any kind of work such as grooving and cutting metal.

A demonstration was also given of the "Skilsaw Sander," which is used for finishing down and sanding artificial or cast stone, marble, concrete, etc.; also for edging floors and resurfacing stair treads, aisles and landings. Some of the models are made with a vacuum dust collector attached. Also shown was the "Tarpen" portable generator, which can be moved about from place to place with ease. Its use is for supplying power for electric handsaws, drills, hammers, and is applicable to floodlighting, paint-spraying plants, cement sprayers and for pumping work.



The "SKILSAW" in operation.

CURRENT AND PROPOSED BUILDING WORK*

Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B. of E for Board of Education; M.W.B. for Metropolitan Water Board; B.S. for Borough Surveyor; B.E. for Borough Engineer; D.S. for District Surveyor; C. for Clerk; T.C. for Town Clerk; C.E. for County Engineer; C.S. for County Surveyor; S. for Surveyor; E. for Engineer.

Abram.—H. Allen, Council Offices, to prepare plans and estimates for parochial hall at recreation ground, for Rev. W. H. Vaughan, St. John's Church.

Annfield Plain.—U.D.C. propose 172 houses at £70,140.

Aston-under-Lyne.—Justices approved plans for "Broadoak Hotel," junction of Broadoak-rd. and Waterloo-rd., for F. Robinson, Unicorn Brewery, Stockport. Architects, J. Eaton & Sons, Stamford-st. Tenders to be shortly invited.—Harold Davies, architect, 4, St. Mary's-parsonage, Manchester, preparing plans for 120 houses at Cockbrook.

Atherstone.—Alterations and improvements to be carried out at Grammar School at £20,000.

Bacup.—A. Beswick, builder, Commercial-st., Stacksteads, proposes 240 houses at Lane Ends and Rockcliffe.

Batley.—West Riding C.C. propose maternity hospital at Stanc'iffe Institution. P. O. Platt, L.R.I.B.A., County Architect, Wakefield.

Benfieldside.—U.D.C. propose 40 or 50 houses. T. P. Leith, Council Offices, architect.

Birmingham.—Ansells Brewery, Ltd., Park-rd., Aston, Birmingham, propose to rebuild "Queen's Head," Gravelly Hill North, Erdington; new licensed premises, junction of Dufton and Quinton-rd. West, and West Boulevard, Quinton; and licensed premises at Trittiford-rd., Billesley.—Holt Brewery, Aston, Birmingham, propose licensed premises, junction of Abbeydale-rd. and West Heath-rd., Kings Norton.

Birmingham.—T.C. to demolish Monument-rd. baths and erect new building on site, at cost of £32,000.

Birmingham.—Tenders to be invited shortly for factory in Highland-rd., Shirley, for Deloro Smelting and Refining Co., Ltd., of Aston Cross. Plans by H. S. Scott, A.R.I.B.A., architect, King's-court, 115, Colmore-row.

Blackburn.—T.C. approved:—Extensions, Paradise Mills, Gate-st., Wallpaper Manufacturers, Ltd. (Cunliffe & Ward Branch).

Blaydon-on-Tyne.—N. T. Barker, builder, Winlaton Mill, to erect 24 houses at Stella-ln., Stel'a.—Tenders to be invited shortly for rebuilding Norman's Riding Isolation Hospital for Blaydon, Ryton and Whickham Joint Hospital Board. Architect, William Crooks, Centenary House, Church-st., Blaydon.

Boston.—Air Ministry approved site for aerodrome and flying club. It is proposed to form company with capital of £10,000 to finance scheme.

Bridlington.—T.C. proposes bathing pool at North Side.

Burnley.—Massey's Burnley Brewery, Ltd., Bridge End Brewery, propose hotel, Brunshaw-rd. and Springwood-rd. Architects, Hitchon & Pickup, 42, Manchester-rd. Contracts not placed.

Carlisle.—Finance Committee approved extensions at Dovenby Hall Colony at £43,000.—Board of Cumberland Infirmary propose extensions at £162,000. Architect, S. W. B. Jack.

Chesterfield.—E.C. propose open-air school and psycho'ogical clinic at Bramling House. Architects, Wilcockson & Cutts, 12, Saltergate. Cost is £16,000.

Connah's Quay.—Chester Northgate Brewery Co., Chester, propose rebuilding of "Halfway House," adjoining existing premises. Plans by F. Charles Saxon, Cathedral-chams., St. Werburgh-st., Chester. Contracts not let.

Coventry.—W. S. Hattrell, architect, 1, Queen's-rd., prepared plans for two new hotels, for Mitchells & Butlers, Ltd., Cape Hill, Birmingham. "The Wallace," corner of Norman-pl.-rd. and Keresley-rd., will cost £16,000, and "The Toll Gate," fronting main Coventry-Birmingham-rd., at Allesley, will cost £18,500.—Claude Redgrave, of Barbican-chambs., Earl-st., architect, for new "Fletchamstead Hotel," on Fletchamstead Highway.—Atkinsons Brewery, Ltd., Queen's-rd., Aston, Birmingham, to erect "Pilot Hotel" fronting Burnaby-rd. and Catesby-rd. Plans prepared by staff architect, W. S. Clements, F.R.I.B.A.

Coventry.—F. Smith, Ltd., Aston Brewery, Birmingham, propose alterations to "Gate Inn," Nether Whitacre, at £1,000.

Coventry.—T.C. approved temporary branch library in Hen-ln. district at £1,600.

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* See also List of Contracts open.

** In these lists every care is taken to ensure that information given is accurate and up to date, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced.

Croydon.—T.C. approved:—Addiscombe Garden Estates, Ltd., Southern Counties Securities, Ltd., New British Garden Estates, Ltd., 1/3, Addiscombe-rd., 6 houses and 23 houses and garages, Crossways, 4 houses and 27 houses and garages, Featherbed-ln., and 4 houses and 41 houses and garages, road No. 6, Addington; British Bata Shoe Co., Ltd., East Tilbury, alterations, 43 Church-st.; Cullen's Stores, Ltd., 32/38, Earl-st., Finsbury, E.C.2, alterations, 25, High-st., South Norwood; Hunt Construction Co., Estate Office, Langland-gardens, Shirley, 14 houses with garages, and 3 houses and garages, Nos. 69/71/73, etc., to 101, incl., Devonshire-way, Addington; Corporation Electricity Dept., extension of sub-station, Addiscombe-rd., Addiscombe; Toms & Partners, 115, Park-st., W.1, 15 garages, at rear of shops and flats, corner of Crown-hill and Beulah-hill, Upper Norwood.

Darlaston.—W. Butler & Co., Ltd., Springfield Brewery, Wolverhampton, propose hotel, junction of Wolverhampton-rd., Bentley.

Darlington.—Electricity offices to be built by T.C. on land at present occupied by Ord & Maddison.

Durham.—B. of E. approved site at Blackhall Colliery for school.—Approval given by B. of E. to proposed site for mining centre and technical institute for County E.C. Plans by County Architect, 34, Old Elvet, Durham.—B. of E. intimated to Durham County E.C. that it is prepared to consider plans for elementary school to accommodate 640 pupils at Birtley.

Eccles.—E.C. to carry out adaptation of existing school for boys for 400.

Exeter.—Berry Head Parking Co., Ltd., of Brixham, acquired Berry Head House for conversion into hotel. Plans approved and estimated cost £12,000.

Fairfield.—Lancashire E.C. propose extensions to Grammar School for Girls. Plans by Stephen Wilkinson, F.R.I.B.A., County Architect, Preston.

Felling-on-Tyne.—S. to U.D.C. to prepare plans for shopping centre, Nest House estate.

Gateshead.—Bushboard Co., Ltd., Newcastle, propose factory on Team Valley trading estate.—Marshall & Tweedy, Mervyn House, Pilgrim-st., Newcastle, architects for factory on Team Valley trading estate, for Square Grit Reinforcements Co., of Middlesex.—Marshall & Tweedy also architects for warehouses for Imperial Chemical Industries on same estate.

Glossop.—B.E. approved plans for senior school for St. Mary's for Catholic Authorities. Architects, Hadfield & Cawkwell, 19, St. James'-st., Sheffield.

Gloucester.—Hotel to be known as "The Walnut Tree" to be built on site in Coney Hill-rd. for Cheltenham Original Brewery, Ltd.

Halifax.—Baths Committee to recommend to T.C. erection of public baths at Clare Hall at £62,000.

Haydock.—Park Lane Co-operative Society proposing stores, Penny-ln. Plans in Architects' Dept., Ballodn-st., Manchester.

Hazel Grove.—Cheshire E.C. proposing elementary school for about 150 infants and juniors at Greenln. F. Anstead Browne, F.R.I.B.A., County Architect, Chester.

Ilkley.—Draft plans for senior school at Ben Rhydding have been placed before District Education Sub-committee by H. Wormald, A.R.I.B.A., County Architect for Yorkshire (West Riding) C.C.

Keighley.—West Riding C.C. propose widening Eastburn bridge. Tenders to be shortly invited.—T.C. propose bus station in Queen-st. and Adelaide-st.

Lanchester.—R.D.C. proposes 46 houses at Burnhope and 58 at Langley Park.

Leeds.—Corporation propose 1,500 houses and 3 schools on housing estate, and public conveniences at Hyde Park corner of Woodhouse Moor. Tenders to be invited.—G. Fredk. Bowman & Sons, architects, to prepare plans for nurses' hostel and medical superintendent's residence at Killingbeck Sanatorium. Tenders shortly to be invited.—Ellison & Co. (Leeds), Ltd., to erect clothing factory fronting Lupton-av., off York-rd.

Liverpool.—10-story block of modern offices to be built on site of existing Exchange Buildings at £1,000,000. Real Property Investment Corporation, Aldwych, London, is company responsible for project.

London.—London C.C. recommend borrowing by Paddington B.C. of £32,000 for Clarendon-st., Woodchester-st. and Cirencester-st. housing scheme; by Stoke Newington B.C. of £1,200 for tenements at Queen Elizabeth's-walk, Lordship-terr., and £10,880 for municipal offices, etc.—Schoolkeeper's house, etc., to be built at playing fields, Hillbrook-rd. school.—Council recommend £10,610 for reconditioning of Buxton-st., Whitechapel; Dingle-la., Poplar; Furzedown, Streatham; Hanover-st., Islington; Magdalen-rd., Wandsworth; Oliver Goldsmith, Cork-st., Camberwell, and Sudbourne, Brixton, L.C.C. schools.—£3,000 approved for acquisition of property for Henry Thornton school, Clapham.—£520 to be spent on alterations at Barrett-st trade school Marylebone.

London.—M.W.B. recommend £150 for extending heating installation at Battersea works; and £750 for painting at Kempton-pk. works.

Macclesfield.—T.C. approved plans for 74 houses, Pownall estate.—T. Shirley Worthington, A.R.I.B.A., 178, Oxford-rd., Manchester, prepared plans for rebuilding "Waggon and Horses" public-house, Handforth.—T.C. propose widening London-rd. railway bridge.

Market Harborough.—Phipps & Co., Ltd., brewers, 8, Gold-st., Northampton, proposing to rebuild "Greyhound Inn." Kettering-rd. Plans prepared in the Architects' Dept. at Head Offices. Contracts not placed.

Middlesbrough.—T.C. Planning Committee approved plans for Ritz Theatre in Linthorpe-rd. Seating accommodation is being provided for 2,365 persons. Cost £60,000.

Middlesbrough.—T.C. approved:—house, Brambles Farm estate, for E.C.; 94 houses, Marton-gr. housing estate, Corporation; hotel, York-rd. J. Smith's Tadcaster Brewery Co., Ltd.; hotel, Parliament-rd., J. W. Cameron & Co.

Milnrow.—Arthur Travis, L.R.I.B.A., Newmarket-chams., Rochdale, prepared plans for 22 houses at Haugh and 12 bungalows, Cornfield-st., Milnrow.

Morpeth.—R.D.C. received sanction to build 70 houses at Lynemouth.—Plans approved for pithead baths at Lynemouth Colliery for Miners' Welfare Department.

Murton Colliery.—Aged Miners' Homes Association propose hostel for aged people at £2,500.

Nantwich.—R.D.C. propose 36 houses.

Nottingham.—Home Brewery Co., Ltd., 34, Milton-st., to build "Westdale Tavern" in Westdale-ln., Carlton, and hotel, junction of Long Eaton-rd. and Attenborough-ln., Attenborough.

Newcastle-on-Tyne.—Agreements been made between City Council and property owners for acquisition of property in St. Thomas's Church area for new Town Hall. Cost of porperty £85,550.—City Mental Hospital Committee proposes extending City Mental Hospital.—Tenders invited by City Council for reinforced concrete bridge over Ouse Burn at Jesmond Dene. Plans by City E.

Northallerton.—County E.C. approved purchase of site in Grammar School-ln. for County Library headquarters at £8,000.

Overton.—Flintshire C.C. propose police station.

Oxford.—Hall's Oxford Brewery Co. propose to rebuild "Farriers Arms," Abingdon-rd., and "University and City Arms" in Cowley-rd.

Padiham.—Massey's Burnley Brewery, Ltd., Bridge End Brewery, Burnley, propose hotel, Wytham-st. Plans by Hitchon & Pickup, architects, 42, Manchester-rd., Burnley. Contracts not placed.

Portsmouth.—T.C. approved:—Portsmouth and Brighton United Breweries, Ltd., public-house, Northern-parade, Gladys-av., junction, and public-house, Copnor-rd., Moncton-rd., junction, and public-house, London-rd., Hilsea.

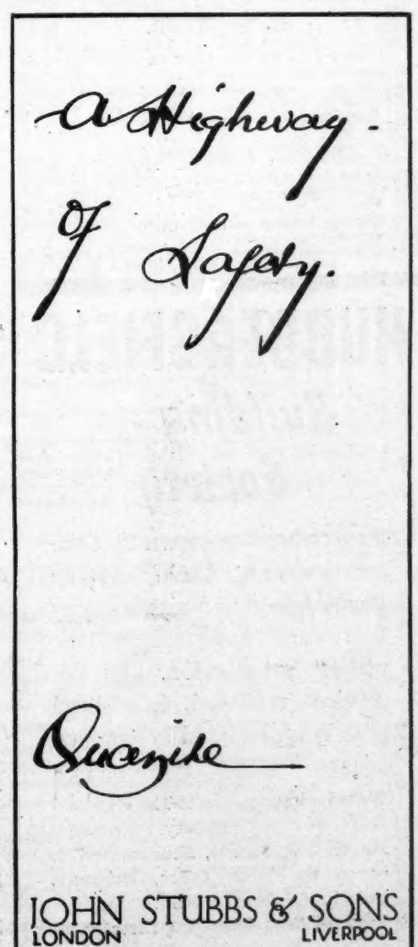
Preston.—Catterall & Swarbricks Brewery, Ltd., Talbot-rd. Brewery, Blackpool, proposing rebuilding of "Queen's Hotel," Bamber Bridge. Plans by Browning & Hayes, 11, Irongate, Derby.

Redditch.—Mitchells & Butlers, Ltd., Cape Hill Brewery, Smethwick, propose rebuilding "Railway Inn," Hewell-rd. Architect, C. E. M. Fillmore, A.R.I.B.A., 8, Newall-st., Birmingham, 3.—Flower & Sons, Ltd., brewers, Worcester-st., Bromsgrove, propose rebuilding "Unicorn Inn." Architect, F. W. B. Yorke, F.R.I.B.A., 36, Calthorp-rd., Edgbaston, Birmingham, 15.

Rishton.—Lancs E.C. to build elementary council school to accommodate 240 senior mixed scholars.

Rochdale.—Rochdale and Manor Brewery, Ltd., Molesworth-st., proposing hotel to be known as "Kingsway," junction of Kingsway and Moss Bridge-rd.

Rotherham.—E.C. propose junior school for 400 children and nursery school for 105 children at Coleridge-rd. and Central school off Acland Clough-rd.—T.C. propose additions to isolation hospital at £21,200.—Health Committee propose duty rooms in blocks 1 and 3 and porters' cottages at Oakwood hall sanatorium at £1,600.



Rowley Regis.—"Fourways Inn" at Portway-rd., Cakemore, to be rebuilt for Darby's Brewery, Ltd., Whitehall-rd., West Bromwich, Birmingham.

Sale.—Cheshire E.C. propose elementary school for 320 boys and 320 girls in Cecil-av. F. Anstead Browne, F.R.I.B.A., County Architect, Chester.

Salford.—T.C. propose reconstruction of Broughton-rd. bridge, Pendleton.

Scarborough.—T.C. approved:—T. H. Johnson & Son, public-house, "Sun Inn," 39, Dean-rd.

Scunthorpe.—Jubilee Trust and National Council of Social Service made provisional grant of £8,000 towards youth centre.

Sheffield.—Millhouses Engineering Co., Ltd., 968, Abbeydale-rd., propose shop and showroom, petrol station and garage, Abbeydale-rd. and Hastings-rd.—W. & E. Sadler, Ltd., building contractors, 10, Staniforth-rd., propose development of land at Handsworth-cres., Handsworth-av. and Houstead-rd. for 244 houses.

Shrewsbury.—T.C. propose 122 houses, Crowmoor.

Skelmanthorpe.—U.D.C. are proposing 32 houses at Scissett and 6 houses, Windmill-cres. Architects, Simpson & Moxon, Southgate-chams., Wakefield.

Smethwick.—Application been granted Mitchells & Butlers, Ltd., Cape Hill Brewery, for hotel to cost about £16,000, junction of Dawson-st. and Bearwood-rd., Bearwood. Architects, Wood, Kendrick & Reynolds, FF.R.I.B.A., 57, Colmore-row, Birmingham.

Southport.—E.C. propose extension of Farnborough-rd. infants' and junior schools for 170 infants and 160 juniors. Architect, L. Barnish, F.R.I.B.A., 58, Rodney-st., Liverpool.

South Shields.—Hotel to be built at junction of Highfield-rd. and Highfield-dr., for McEwan & Co., Ltd., City-rd., Newcastle-on-Tyne. Plans by W. & T. R. Milburn, 17, Fawcett-st., Sunderland. No contracts let.—T.C. completed negotiations for 230 acres of land at Marsden for 2,000 houses.—Scheme for extensive alterations to Marsden "Grotto Inn" for C. Vaux & Sons, Ltd., Castle-st., Sunderland, been approved by licensing magistrates. Architects, Hetherington & Wilson, 52, Westgate-rd., Newcastle-on-Tyne.—It is proposed to build footbridge over Harton Coal Co. railway crossing at £1,200.

Stafford.—Hotel to be built in Stone-rd. for W. Butler & Co., Ltd., Springfield Brewery, Wolverhampton.

Stockport.—T.C. propose 194 houses, Walnut Tree site.—E.C. proposing extensions at Technical College. Plans by L. Yates, L.R.I.B.A., Education Architect, Offices, St. Peter's-gate, Stockport.

Stockton-on-Tees.—G. P. Stainsby, 25, High-st., prepared plans for warehouse in Brougham-st. for T. Mellanby.

Stourbridge.—Showell's Brewery Co., Ltd., 120, Station-st., Burton-on-Trent, proposing to rebuild "Gipsy's Tent" public-house at Hagley. Plans by Scott & Clarke, Regent-chams., Wednesbury. Tenders not yet invited.

Sunderland.—T.C. to erect 30 flats and 22 houses in East End.

Swadlincote.—U.D.C. approved:—Estate Development, Darklands-rd., Parker Bros., White House Farm. Architects, J. German & Son, Lower Church-st., Ashby.

Tansley.—Derbyshire E.C. propose elementary school. County Architect, J. Harrison, St. Mary's-gate, Derby.

Taunton.—T.C. approved: Lay-out of Greenway estate, T. S. Penny, Ltd.

Team Colliery.—Local Miners' Welfare Committee propose institute. E. Graham, Coal Trade Offices, Neville Hall, Newcastle-on-Tyne, is Northern Welfare Supervisor.

Thorne.—R.D.C. acquiring 100 houses.

Tynemouth.—Corporation propose central library building and also branch libraries.

Urmston.—U.D.C. to develop 4 acres of land at Gregory House Farm for houses.—F. L. Leeming, S., prepared scheme for redevelopment of Flixton Village. Tenders to be invited.—Plans approved by U.D.C.:—Gas showroom, Flixton-rd., Stretford and District Gas Board; "Moss Vale" hotel, Lostock-rd., Davyhulme, Walker & Homfray, Ltd., Woodside Brewery, Salford.

Walsall.—Walsall and District Co-operative Society, Ltd., Kenmare House, Bridge-st., propose rebuilding branch premises at Haydock-rd., Chadsmoor, and erection of warehouse. Plans by Jeffries & Shipley, architects, Kingscourt-chams., Bridge-st. Contracts not let.

Walton and Weybridge.—U.D.C. approved: Hatton Estates, Ltd., block of 27 flats, Bridge-st., Walton; C. H. Day & Son, 22 pairs houses and 3 blocks of 3 houses, Cottimore-av., Cottimore Estate, Walton.

Weardale.—R.D.C. have informed M.H. that they are to build 34 houses at Wolsingham and 22 at Frosterley.

Washington.—U.D.C. proposes 64 houses.

Wednesbury.—"Rising Sun" inn at Trouse-ln. to be rebuilt for Highgate Walsall Brewery Co., Ltd., Highgate, Walsall.

Wednesfield.—Staffordshire E.C. proposing junior mixed and infants' school on Colman-rd., Penny Hill estate. Cost £14,000.

Wellingborough.—Campbell, Praed & Co., Ltd., Brewers, The Brewery, propose hotel, junction of Sywell to Overstone and Sywell to Holcot-rds., at Sywell Aerodrome. Plans by resident architect, S. P. Woodrow.

West Hartlepool.—Plans to be prepared for library, art gallery and museum for T.C. Plans by B.E.

Whitstable.—U.D.C. received approval of M.H. for 22 bungalows for aged persons at Swanfield-rd.

Wigan.—T.C. propose 170 more houses, Beechhill estate.

York.—Tenders being invited for rebuilding of "Cygnet Inn," Price-st., for Joshua Tetley & Sons, Ltd., The Brewery, Leeds. Plans by Kitson, Parish, Ledgard & Pyman, Lloyds Bank-chams., Vicar-ln., Leeds.

PRICES CURRENT OF MATERIALS*

Owing to the exceptional circumstances which prevail at the present time prices of materials should be confirmed by inquiry.

PRINCIPAL CHANGES OF THE WEEK.—Copper goods advance 3d. per lb. Lead in all forms advances by £3 10s. per ton, and White Lead and White Lead Paint by £3.

BRICKS, &c.

Per 1,000 Alongside in River Thames up to Mortlake £ s. d.

Best Stocks 4 2 0
Second Hand Stocks..... 3 10 0

Per 1,000. Delivered at London Goods Stations.

£ s. d.		£ s. d.
"Phorpres" ..*2 6 3	Flettons, B'll'n'se ..	3 6 6
Flettons at King's Cross *2 6 3	Best blue Pressed Staffs ..	8 5 0
Do., grooved for Plaster *2 8 3	Do. Bullnose	8 15 0
	Blue Wire Cuts....	7 0 0
White Midhurst Facing Bricks (delivered London site)		4 0 0
"Phorpres" Whites (King's Cross)		3 11 3
"Phorpres" Rustic Facings (King's Cross)..*3		6 3
Best Stourbridge Fire Brick :—		
2½ in. 7 15 0	3 in.	8 15 0

*Delivered to site in W.C. district, 4/3 extra per 1,000.

GLAZED BRICKS—

Best White Ivory and Salt Glazed Stretcher....23 0 0	D'ble Str'tch'rs 31 10 0	
	D'ble Headers 28 10 0	
Headers 22 10 0	One side and two Ends 32 10 0	
Quoins, Bull-nose and 4½ in. Flats 29 10 0	Two sides and one End 33 10 0	
	Splays and Squints 30 0 0	

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

PARTITION SLABS.

Delivered London Area.

CLINKER CONCRETE.

2" per yd. sup.	1 6	3" per yd. sup.	2 0
2½" " " ..	1 8	4" " "	2 4

CRANHAM TERRA COTTA.

2" per yd. sup.	3 0	3" per yd. sup.	3 8
2½" " " ..	3 6	4" " "	4 7

HEMPSTEAD—KEYED TWO SIDES.

12" x 9" x 2" ..	2 6	12" x 9" x 3"	3 0
12" x 9" x 2½"..	2 9	12" x 9" x 4"	3 9

Per yard super d/d. Free on site, London.

	s. d.	
Thames Ballast	7 3 per yd.	delivered 2 miles radius Paddington.
Pit Ballast	6 3 " "	
Pit Sand	7 9 " "	
Washed Sand	8 3 " "	
¾ in. Shingle	7 3 " "	
¾ in. Broken Brick ..	11 3 " "	
Tan Breeze	8 3 " "	

CEMENT.

Best British Portland Cement, Standard Specification, delivered London Area in jute sacks (11 to ton), or paper bags (20 to ton) free (non-returnable) :—

	£ s. d.
4 ton loads and upwards site ..... Per ton	1 19 0
1 ton to 4 tons site	2 1 0
Alongside Vauxhall in 80-ton lots	1 15 0
"Ferrocrete" Rapid Hardening Cement :—	
4 ton loads and upwards site	2 5 0
1 ton to 4 tons site	2 7 0
Alongside Vauxhall in 80-ton lots	2 1 0

NOTE.—Jute sacks are charged 1s. 6d. each and credited 1s. 6d. nett, if returned in good condition within three months, carriage paid.

Water Repellent "Blue Circle" Cement, 30/- per ton extra on ordinary "Blue Circle" Portland Cement prices.

"Colocrete" Nos. 1 and 2 Coloured Rapid Hardening Portland Cement in 1-cwt. paper bags free (non-returnable) in 1-ton lots and upwards site 3 6 0

"Snowcrete" White Portland Cement in 1-cwt. paper bags free (non-returnable)

1 ton and upwards site..... 8 15 0

Super Cement (Waterproof) paper bags free 3 9 0
Roman Cement 6 15 0
Parian Cement 6 0 0
Keene's Cement, White 6 0 0
" " Pink 5 12 6

Cementone Colours for cement according to tints per cwt. from £2 16 0.

PLASTER.

£ s. d.		£ s. d.
Coarse, Pink 2 17 0	Sirapite, Coarse	3 10 0
" White ..3 10 0	" Finish	..3 18 0
Pioneer 3 10 0		
Super Carbo 2 7 6	4-ton loads & over London Area, paper bags free.	
Carbo Setting....2 12 6		
Best Ground Blue Lias Lime 1 17 6	Grey Stone Lime	2 2 0
	Chalk Lime	2 2 0
Granite Chippings 1 12 0	Hair per cwt. ..	2 2 6

NOTE.—Sacks are charged 1s. 9d. each, and credited 1s. 6d., if returned in good condition within three months, carr. paid.

Stourbridge Fireclay in sacks 37s. 0d. per ton at rly. dep.

STONE.

BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube .... s. d. 2 10

BEER STONE—RANDOM BLOCK—
Free on rail at Seaton Station. per ft. cube 2 3
Delivered free on rail Nine Elms, S.R. per ft cube 3 1½
Selected approximate size one way, 1d. per cubic ft. extra; selected approximately three sizes or for special work, 3d. per cubic ft. extra.

PORTLAND STONE—
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube 4 4½
Do. do. delivered on road waggons at above stations, per ft. cube 4 5½
White basebed, 3d. per ft. cube extra.
NOTE.—1d. per ft. cube extra for every ft. over 20 ft. *average*, and ½d. beyond 30 ft.

HOPTON-WOOD STONE—
F.O.R. Quarries, Wirksworth, Derbyshire, s. d.
Random blocks from 10ft. and over P.ft.cb. 14 0
Sawn two sides..... 22 6

HOPTON-WOOD STONE—
Sawn three or four sides 27 9

CHILMARK—RANDOM BLOCK—
At Nine Elms, per ft. cube 3 11

YORK STONE, BLUE.—*Robin Hood Quality.*
Delivered at any Goods Station, London.
6 in. sawn two sides landings to sizes (under 30 ft. super) ..... Per ft. super 5 0
6 in. rubbed two sides, ditto .. " 5 6
3 in. sawn two sides slabs (random sizes) ..... " 2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) ..... " 1 6½
1½ in. to 2 in., ditto ..... " 1 3½

HARD YORK—
Delivered at any Goods Station, London.
Scappled random blocks..... Per ft. cube 6 3
6 in. sawn two sides landings to sizes(under 40 ft. super) .....Per ft. super 5 1½
6 in. rubbed two sides, ditto .. " 6 1½
4 in. sawn two sides slabs (random sizes) ..... " 3 1½
3 in. ditto ditto .... .. " 2 5
2 in. self-faced random flags....Per yd. super 7 6

CAST STONE.

Delivered in London area in full van loads, per ft. cube : Plain, 7s. 6d. Moulded, 8s. 6d. Sills, 10s. 0d.

SOFT WOOD.

GOOD BUILDING DEAL.

Inches.	Per stan.	Inches.	Per stan.
4 × 11.....	£23 10	3 × 6....	£18 10
4 × 9.....	22 10	3 × 11....	21 0
4 × 8.....	21 0	2 × 11....	21 0
4 × 7.....	21 0	3 × 9....	19 10
3 × 8.....	17 10	2½ × 9....	19 10
3 × 7.....	18 10	3 × 4½ ..	18 10
2½ × 7.....	18 10	3 × 4....	18 10

PLANED BOARDS.

1 × 11.....	£26 10	1 × 9....	£24

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
⅝.....	16/-	1¼	25/-
⅞.....	17/-	1½	31/6
1	19/-		

TONGUED AND GROOVED FLOORING.

Inches.	per sq.
1	21/-
1¼.....	26/-
1½.....	32/6

MATCHING (BEST).

Inches.	per sq.
⅝	16/-
¾	18/6
1	22/6

ins. BATTENS. s. d.
¾ × 2 per 100 ft. 2 6

SAWN LATHS. s. d.
Per bundle.... 2 3

HARD WOOD.

1 INCH AND UP THICK.

	£ s. d.
Average price for prime quality.	
Dry Austrian Wainscot, per ft. cube	0 15 0
Dry American and/or Japanese Figured Oak, per ft. cube.....	0 12 0
Dry American and/or Japanese plain Oak, per ft. cube	0 10 0
Dry sq. edged Honduras Mahogany, per ft. cube.....	0 14 0
Dry log-cut Honduras Mahogany, per ft. cube	0 16 0
Dry Cuba Mahogany, per ft. cube	1 1 0
Dry Teak, per ft. cube	0 14 0
Dry American Whitewood, per ft. cube.....	0 10 0
Best Scotch Glue, per cwt.	3 0 0
Liquid Glue, per cwt. ..... 4 7 0 to	5 10 0

HUDDERSFIELD
Building Society

Experience has shown that the arrangements made by the Huddersfield to assist occupier borrowers have given the utmost satisfaction, and the service rendered has been greatly appreciated by builders' clients.

Write for information to The Huddersfield Building Society, Britannia House, 203, Strand, London, W.C.2, or to the Head Office, Britannia Buildings, Huddersfield. Andrew Stewart, C.A., Managing Director.

WHEN YOU INVEST—A HOUSE IS BEST!

SLATES.

First quality slates from Bangor or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

£ s. d.		£ s. d.
24 by 12 .... 29 15 0	18 by 10	15 12 6
22 by 12 .... 25 0 0	18 by 9	14 2 6
22 by 11 .... 22 10 0	16 by 10	13 12 6
20 by 12 .... 22 0 0	16 by 8	10 15 0
20 by 10 .... 19 15 0		

TILES.

Delivered at London rate stations in full truck loads of not less than 6 tons. ..... Per 1,000 f.o.r. London.

Best machine-made tiles from Broseley or Staffordshire district	£4 2 6
ditto hand-made ditto	4 13 0
Ornamental ditto	5 0 0
Hip and valley tiles (per dozen) Hand-made	0 8 6
Machine-made	0 8 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION, PER TON—

R.S. Joists, cut and fitted	£13 10 0
Plain Compound Girders	16 0 0
" " Stanchions	18 0 0
In Roof Work	20 0 0

MILD STEEL ROUNDS.—To London Stations, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	14 5 0	⅜ in. to ½ in.	12 15 0
⅝ in.	13 5 0	⅝ in. to 2⅜ in.	12 5 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Standard Wrot. Mild Steel Tubes and Tubulars Sizes ⅛in. to 6in. %	Genuine Wrot. (Puddled) Iron Tubes and Tubulars Sizes ¼in. to 6 in. %	Standard Fittings Sizes. ⅛in. to 6in. %	Standard Flanges Sizes. ⅛in. to 6in %
Gas	65	52½	57½	70
Water	61½	48½	52½	65
Steam	57½	45	47½	60
Galv. gas.	52½	40	47½	60
Galv. water	47½	35	42½	55
Galv. steam	42½	30	37½	50

C.I HALF-ROUND GUTTERS—London Price ex Works

Per yd in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
2 in.	1/5½	1/1½	4½d.
3½ in.	1/6½	1/3	5½d.
4 in.	1/6½	1/4½	6½d.
4½ in.	1/8	1/6½	9½d.
5 in.	1/10½	1/8½	10d.

O.G. GUTTERS.

3 in.	1/7¾	1/5½	7d.
3½ in.	1/9½	1/5½	7¾d.
4 in.	1/11	1/6½	8½d.
4½ in.	2/–	1/9½	9½d.
5 in.	2/4½	2/0½	11½d.

RAIN WATER PIPES, &c.

Per yd. in 6 fts.	Pipe.	Bends, stock Branches, angles, stock angles.	Bends, stock Branches, angles, stock angles.
2 in.	2/2½	1/4½	2/0
2½ in.	2/3½	1/6½	2/4½
3 in.	2/9½	1/11	2/10½
3½ in.	3/3½	2/3¾	3/3¾
4 in.	3/9	2/9	4/0½

Less 20 per cent. trade discount.
Tonnage allowance—4-ton lots, 5 per cent.
2-ton lots, 2½ per cent.

L.C.C. COATED SOIL PIPES—London Prices ex Stock,

	Pipe. s. d.	Bends, stock Branches, angles, stock angles. s. d.	s. d.
2 in. per yd. in 6 fts. ..	2 9¾	2 0	2 5½
2½ in. "	3 2	2 2½	3 0½
3 in. " ..	3 6	2 5½	3 7½
3½ in. " ..	3 9½	3 0½	4 2½
4 in. " ..	4 2½	3 4½	4 10½

L.C.C. COATED DRAIN PIPES.—London Prices ex Stock,

	Pipe. s. d.	Bends, stock Branches, angle, stock angles. s. d.	s. d.
3in.peryd.in 9ft.lengths	3 4½	4 6	7 0
cwt. qr. lbs.			
4 in. " 1 1 20..	5 1	5 9	8 6
5 in. " 1 2 22..	6 6	8 9	13 9
6 in. " 2 0 6 ..	7 6	10 3	18 0

Gaskin for jointing 41/- per cwt.

Per ton in London.

	£ s. d.		£ s. d.
IRON—			
Common Bars	10 0 0	to	10 10 0
Staffordshire Crown Bars—			
Good merchant quality ..	12 0 0	to	12 10 0
Staffordshire Marked Bars ..	15 0 0	..	16 0 0
Mild Steel Bars	10 10 0	..	11 10 0
Steel Bars, Ferro-Concrete quality, basis price	10 0 0	..	10 10 0
Hoop iron, basis price	12 10 0	..	13 10 0
" Galvanised	28 10 0	..	29 10 0

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS—(*Contd.*)

	Per ton in London. £ s. d.		£ s. d.
IRON—			
Soft Steel Sheets, Black—			
Ordinary sizes, to 20 g.	13 10 0	..	14 10 0
" " 24 g.	14 10 0	..	15 10 0
" " 26 g.	15 10 0	..	16 10 0
Sheets Flat Best Soft Steel, C.R. and C.A. quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	15 10 0	..	16 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	17 10 0	..	18 10 0
No. 1 quality £4 per ton extra.			
Flat and Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 9 ft. to 20 g.	15 10 0	..	16 10 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	16 10 0	..	18 0 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	17 10 0	..	19 0 0
Sheets, Galvanised, Flat, Best quality—			
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	16 10 0	..	17 10 0
Best Soft Steel Sheets, 22 g. and 24 g.	17 10 0	..	18 10 0
Best Soft Steel Sheets, 26 g.	18 0 0	..	20 0 0
Cut Nails, 3 in. to 6 in.	18 10 0	..	20 0 0
(Under 3 in. usual trade extras.)			

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

COPPER.

		s. d.
Seamless Copper tubes (basis)	per lb.	1 3
Strong sheet	"	1 4
Thin	"	1 5
Copper nails	"	1 4
Copper wire	"	1 4

PLUMBERS' BRASS WORK.

Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/-	45/-	76/-	153/-	246/-	510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	200/-	588/- per doz.

RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in.	¾ in.	1 in.
39/-	60/-	116/6 per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
7/6	11/-	17/-	29/-	36/-	63/- per doz.

BRASS SLEEVES.

1¼ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

NEW RIVER PATTERN CROYDON BALL VALVES S.F.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.
35/-	56/-	98/-	162/-	228/- per doz.

DRAWN LEAD P. & S. TRAPS WITH GLASS CLEANING SCREW.

	1¼ in.	1½ in.	2 in.	3 in.
8 lbs. P. traps ..	33/-	41/-	56/-	101/- per doz.
8 lbs. S. traps ..	35/-	45/-	66/-	126/- per doz.

TIN.—English ingots, 2/9 per lb. SOLDER.—Plumbers' 1/2, Tinmen's 1/4, Blowpipe 1/5 per lb.

PAINTS, &c.

			£ s. d.
Raw Linseed Oil, in pipes	per gallon		0 3 0
" " " in barrels	"		0 3 2
" " " in drums	"		0 3 4
Boiled " " in barrels	"		0 3 5
" " " in drums	"		0 3 7
Turpentine, in barrels	"		0 4 0
" in drums (10 galls.)	"		0 4 2
Genuine Ground English White Lead, per ton (In not less than 5-cwt. casks.)			62 0 0
Extra for 1-cwt. kegs over 5-cwt. casks is 2/9 cwt.			
GENUINE WHITE LEAD PAINT. "Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J" Brand, and other best brands (in 14-lb. tins) not less than 5-cwt. lots	per ton delivered		81 0 0
Red Lead, Dry (packages extra) ..	per ton		49 0 0
Best Linseed Oil Putty	per cwt.		0 13 0
Size. XD quality	fkn.		0 3 6

LEAD, &c.

(Delivered in London.)	Per ton. £ s. d.
LEAD.—Sheet, English, 4 lb. and up	39 5 0
Pipe in coils	38 15 0
Soil pipe	44 5 0
Compo pipe	44 15 0

NOTE.—Country delivery, 20/- per ton extra, lots under 3 cwt. 4/- per cwt. extra, and over 3 cwt. and under 5 cwt., 2/6 per cwt. extra. Cut to sizes, 4/- per cwt. extra.

Old lead, ex London area, at Mills ..... per ton } £26 5 0

VARNISHES, &c.

		Per gallon.
Oak Varnish	Outside	0 14 0
Fine Do.	Do.	0 16 0
Fine Copal	Do.	0 18 0
Pale Copal	Do.	1 0 0
Pale Opal Carriage	Do.	1 4 0
Best Do.	Do.	1 12 0
Floor Varnish	Inside	0 18 0
Fine Pale Paper	Do.	0 18 0
Fine Copal Cabinet	Do.	1 2 0
Fine Copal Flatting	Do.	1 0 0
Hard Drying Oak	Do.	0 18 0
Fine Hard Drying Oak	Do.	0 19 6
Fine Copal Varnish	Do.	1 0 6
Pale Do.	Do.	1 12 0
Best Do.	Do.	1 2 6
Best Japan Gold Size		0 12 6
Best Black Japan		0 10 0
Oak and Mahogany Stain (water)		0 12 0
Brunswick Black		0 7 6
Berlin Black		0 14 0
Knotting (patent)		0 15 0
French and Brush Polish		0 12 0
Liquid Dryers in Terebene		0 9 0
Cuirass Black Enamel		0 7 0

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

ORDINARY GLAZING QUALITY & SELECTED GLAZING QUALITY

per ft. super.		per ft. super
18 oz. O.G.Q.	2½d.	32 oz. O.G.Q. 6d
18 " S.G.Q.	2¾d.	32 " S.G.Q. 6½d
24 " O.G.Q.	3½d.	Obscured Sheet, 15 oz. 3d.
24 " S.G.Q.	3¾d.	" " 21 " 4½d.
26 " O.G.Q.	3¾d.	Fluted, 15 oz. 6½d., 21 oz. 9d.
26 " S.G.Q.	4¼d	Em'lld 15 oz., 4½d., 21 oz. 5½d

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE & FIGURED CATHEDRAL, ETC., IN CUT SIZES.

	per ft.
Rolled plate, ¼ in.	5½d.
Rough cast double rolled, ⅛ in.	6½d.
Rough cast double rolled, ¼ in.	6½d.
Figured rolled, etc., white	6½d.
Figured rolled, etc., tinted	9½d.
Rolled sheet	6d.
White rolled cathedral	6d.
Tinted rolled cathedral	8½d.

Rolled plate is the same price as rough cast double rolled.

	Per ft. s. d.
Reeded, Broad Reeded, Cross Reeded and Chevron Reeded, ¼ in. thick	0 10½
Wired Rolled, ¼ in. thick	0 9½
Wired Cast, ¼ in. thick	0 9½
"Calorex" Sheet, 21 oz.	2 6
" 32 oz.	4 0
" Cast, ¼ in. thick	0 10
" " ⅜ in. thick	1 0
" " ½ in. thick	1 2

"VITA" GLASS.

Clearsheet—not exceeding 1 foot	1 3
Do. do. 2 feet	1 0
Do. over 2 feet	1 9
Polished plate not exceeding 1 foot	1 6
Do. do. 2 feet	3 0
Cathedral—not exceeding 1 foot	1 0
Do. larger sizes	1 6
Horticultural Sheet and Cathedral "Vita" Glass. Sizes up to 24 inches by 18 inches or not exceeding 3 feet	1 6
3/16 in. Wired Georgian Design. Sizes up to 96 inches long by up to 24 inches wide	2 6

BUILDING TRADE WAGES IN SCOTLAND

Following are grade rates authorised by the Scottish N.J.C. from February 1. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classification	A	A¹	A²	A³	B	B¹
Craftsmen	1/7½	1/7	1/6½	1/6	1/5½	1/5
Labourers	1/2¾	1/2¼	1/2	1/1½	1/1	1/0½

Aberdeen	A	East Fife (embraced b a line from Largs to Kingsbarns and eastward to the Coast)	B	Hamilton	A	Perthshire	A
Ayrshire	A			Inverurie	A¹	Peterhead	A
Banff	B			Kincardineshire	A²	Renfrewshire	A
Berwickshire	A²			Kinross-shire	A	Rothesay	A
Bridge of Allan	A	East Lothian	A	Lanarkshire	A	Roxburghshire	A²
Broughty Ferry	A	Edinburgh	A	Mid-Lothian	A	St. Andrews	A
Clackmannanshire	A	Fifeshire (with the exceptions of towns in East Fife which are under Grade B)	A	Monifieth	A	Selkirkshire	A²
Doune	A			Moray and Nairn	B	Stewartry	A²
Dunblane	A			Newport	A	Stirlingshire	A
Dumbartonshire	A	Forfarshire	A²	Peebleshire	A²	Stornoway	A²
Dumfriesshire	A²	Glasgow	A	Perth	A	Tayport	A
Dundee	A	Greenock	A			West Lothian	A
Dunoon	A						

The information given in this table is copyright. The rates of wages in England and Wales are given on page 494.

THE SCOTTISH BUILDER

NEW BUILDINGS

ABERDEEN. — ALTERATIONS. — The Town Council Plans and Town Planning Committee have approved of plans for alterations at the premises of the Caledonian Milling Co. in Palmerston-road, at £2,000.

ARBROATH.—HOUSES.—The T.C. has decided to erect 42 houses in Stanley-street.

ARGYLLSHIRE.—BUILDING.—The C.C. is to erect 14 new police stations in rural areas of the county to replace old buildings at £10,000.

BARRHEAD.—HOUSES.—The T.C. have decided to erect approximately 60 houses at the Trees housing scheme.

CARSTAIRS.—OFFICES.—The Lanarkshire C.C. is to erect a new police station and other offices. Mr. John Stewart, Albert-street, Motherwell, is the architect.

CAWDOR.—BRIDGE.—The Joint County Council of Morayshire and Nairnshire have decided to construct a bridge and road diversions at Cawdor, about six miles from Nairn. Plans for the scheme are being prepared by Messrs. F. A. MacDonald and Partners, consulting engineers, 135, Wellington-street, Glasgow.

EASTWOOD.—LIBRARY. — The Renfrewshire C.C. is to erect for the district a new public library. Mr. John Coutts, County Offices, Paisley, is the architect.

FORT WILLIAM.—BUILDING.—The British Aluminium Co., Ltd., Adelaide House, King William-street, E.C.4, is to considerably extend its power-house and factories. The contract for the building work has been placed with the Clydeside Constructional Co., Ltd., of Bridge of Weir, and will be carried out under the direction of the company's chief architect, Mr. A. S. Kinnear. The consulting engineers are Messrs. C. S. Meik and Halcrow, 16, Victoria-street, S.W.1.

GALASHIELS. — BRIDGE. — Arrangements have been completed for a new bridge at Galashiels Station on the Melrose-road. Two contracts have been entered into, one with Messrs. Alexander Findlay and Co., Motherwell, for the steelwork, and the other with Messrs. John Monteith, Dalkeith, for the mason and builder work. It is estimated that the total cost of the work will be about £30,000.

GLASGOW.—EXTENSIONS.—Plans to be prepared for new extension to home at Knightswood for nurses, at approximately £7,500. Mr. Thomas Somers, architect, Offices and Public Works.

GLASGOW.—EXTENSION. — An extension which is to be made to the Royal Technical College buildings at the north-west corner will cost about £35,000.

GLASGOW. — CENTRE. — A community centre, the cost of which will be between £30,000 and £40,000, is being planned for the municipal housing scheme at Knightswood, Glasgow. The centre will include a swimming pool, public hall, library, public health clinic, and an estate office.

GLASGOW.—SCHOOL.—Plans are in hand for a new Catholic school at Carnwadrie. Mr. William McCaig, architect, 129, Bath-street.

GLASGOW.—EXTENSION. — An extension of the Scottish Ice Rink at Crossmyloof, is under consideration. Plans for the extension have been prepared and discussed, and at a meeting of the directors it was decided to proceed as soon as possible with an extension on the ground adjoining the present rink.

GREENOCK.—BUILDING.—A new seaplane base is to be established at Greenock. The site of the base is the river embankment at the Great Harbour, part of which has been leased by the Greenock Harbour Trust to the West of Scotland Air Services.

GREENOCK. — CHURCH. — The Dean of Guild Court has passed plans for a new United Free Church and hall at Ardgowan-square. The church will have accommodation for 400 people, and the hall for 250 people.

(*Continued on page 503.*)

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	8	0
Add if in clay	„ „	1	0
Add for every additional depth of 6 ft.	„ „	0	6
Planking and strutting to trenches	per foot super	0	3
Do. to sides of excavation, including shoring	„ „	1	0

CONCRETOR.

Portland cement concrete in foundations 1 to 6	per yard cube	24	0
Add if in underpinning in short lengths	„ „	5	0
Add if in floors 6 in. thick	„ „	2	0
Add if in beams	„ „	2	6
Add if aggregate 1 : 2 : 4	„ „	8	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	„ „	1	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	26	0	0
Add if in stocks	„	6	0	0
Add if in Staffordshire blues	„	22	0	0
Add if in Portland cement and sand	„	1	5	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1¼

POINTING.

Neat flat struck or weathered joint	„ „	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—				
Fair external in half brick rings	„ „	0	0	10
Axed in stocks	„ „	0	0	9
Rubbed and gauged jointed in putty camber or segmental	„ „	0	5	9

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement	„ „	0	0	11
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	„	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard super	4	6
Three-quarter-inch vertical damp course	„ „	9	6
Three-quarter-inch on flats in two thicknesses	„ „	6	0
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	„ „	1	0

MASON.

		s.	d.
York stone templates fixed	per foot cube	12	9
York stone sills fixed	„ „	22	0
Bath stone and all labour fixed	„ „	10	6
Beer stone and all labour fixed	„ „	15	0
Portland stone fixed	„ „	15	6
Chilmark stone fixed complete	„ „	13	6

SLATER.

Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	70	0	
Do. 20 in. × 10 in. Do. Do.	„	71	6	
Do. 24 in. × 12 in. Do. Do.	„	73	6	

CARPENTER AND JOINER.

Fir framed in plates	per foot cube	3	6	
Do. joists	„ „	4	0	
Do. roofs, floors and partitions	„ „	4	6	
Do. trusses	„ „	6	9	

		¾″	1″	1¼″	2″
Deal rough close boarding	per sq.	30/-	35/-	43/-	70/-

Flat centering for concrete floor, including struts or hangers	„	50	0		
Do. to beams	per ft. sup.	0	8		
Centre for arches	„	1	6		
Gutter boards and bearers	„	1	0		

FLOORING.

		¾″	1″	1¼″	1½″
Deal-edges shot	per sq.	—	38/-	45/-	52/-
Do. tongued and grooved	„	—	43/-	50/-	58/-
Do. matchings	„	40/-	45/-	—	—
Moulded skirtings, including backings and grounds	per ft. sup.	1/4	1/7	1/9	2/3

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	9
Two Do. Do. Do.	„ „	2	0
Add for fitting and fixing	„ „	0	2
Deal cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares, double-hung, double hung with pulleys, lines and weights, average size		3	3

DOORS.

		1½″	1¾″	2″
Two-panel square framed	per ft. sup.	2/1	2/3	2/5
Four-panel Do.	„	2/4	2/6	2/9
Two-panel moulded both sides	„	2/6	2/9	2/11
Four-panel Do. Do.	„	2/9	2/11	3/2

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	12	0

		1″	1¼″	1½″
Plain deal jamb linings framed	per ft. sup.	1/7	1/8	1/11
Deal shelves and bearers	„	1/2	1/4	1/7
Add if cross-tongued	„	2d.	2d.	2d.

STAIRCASES.

		1″	1¼″	1½″	2″	2½″
Deal treads and risers in and including rough brackets		2/-	2/3	2/8	—	—
Deal strings wrot on both sides and framed		1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. x 1½ in.	per ft. run	0	9
Mahogany handrail, average 3 in. x 3 in.	„ „	5	6
Add if ramped	„ „	11	0
Add if wreathed	„ „	22	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting into floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	15	0
Plain compound girders	„	18	0
Do. stanchions	„	20	9
In roofwork	„	26	6

RAIN-WATER GOODS.

		3″	4″	5″	6″
Half-round plain rebated joints	ft. run	1/-	1/1	1/3	1/6
Ogee Do. do.	„	1/2	1/3	1/9	2/3
Rain-water pipes with ears	„	1/3	1/10	—	—
Extra for shoes and bends	each	2/9	3/11	—	—
Do. stopped ends	„	1/1	1/4	1/9	2/6
Do. nozzles for inlets	„	2/2	2/7	3/7	4/-

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	49	0
Do. do. flats	„	48	0
Extra labour and solder in coated cesspools	each	6	0
Welt joint	per ft. run	0	4
Soldered seam	„ „	1	6
Copper nailing	„ „	0	3

		½″	¾″	1″	1½″	2″	4″
Drawn lead waste per ft. run		10½	1/2	1/9	2/5	3/-	—
Do. service	„	1/3	1/8	2/2	3/2	—	—
Do. soil	„	—	—	—	—	—	6/-
Bends in lead pipe	each	—	—	—	—	2/3	5/6
Soldered stop ends	„	0/7	0/11	1/3	2/-	2/6	—
Red lead joints	„	0/9	0/10	1/1	1/7	1/10	3/6
Wiped soldered joints	„	2/-	2/6	2/9	3/5	4/3	6/-
Lead traps and cleaning screws	„	—	—	—	10/-	13/-	—
Bib cocks and joints	„	6/-	9/-	13/-	—	—	—
Stop cocks and joints	„	10/6	12/6	17/6	50/-	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	0
Do. Do. Sirapite	„ „	2	3
Do. do. Keen's	„ „	3	0
Add saw lathing	„ „	1	4
Add metal lathing	„ „	2	4
(Not including hangers or runners, etc., for suspended ceilings.)			
Portland cement screed	„ „	1	7
Do. plain face	„ „	3	3
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	4	6

GLAZIER.

		s.	d.
21-oz. sheet plain	per foot sup.	0	6½
26-oz. Do.	„ „	0	7¾
Obscured sheet	„ „	0	8
⅛-in. rolled plate	„ „	0	9
¼-in. rough rolled or cast plate	„ „	0	10
¼-in. wired cast plate	„ „	1	1

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	7½
Knotting and priming	„ „	0	7
Plain painting, 1 coat	„ „	0	9
Do. 2 coats	„ „	1	2
Do. 3 coats	„ „	1	9
Do. 4 coats	„ „	2	4
Graining	„ „	2	3
Varnishing twice	„ „	1	9
Sizing	„ „	0	3
Flatting	„ „	0	7
Enamel	„ „	1	1
Wax polishing	per foot sup.	0	6
French polishing	„ „	1	2
Preparing for and hanging paper	per piece 2/- to 4/-		

*These prices apply *to new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Act, and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

NEW BUILDINGS IN SCOTLAND

(*Continued from page* 501).

GLASGOW. — HOUSES. — The Corporation have decided to build 400 houses by direct labour on various sites. The Corporation have also approved of plans for the erection of 433 houses on the Scotstoun Estate at Great Western-road.

INVERNESS.—HALL. — Alterations and additions to the Waverley Hotel, Union-street, estimated to cost £2,000, have been sanctioned by the Dean of Guild Court. The application was submitted by the Inverness Hotels Co., Ltd., 8, Kinnoull-street, Perth. Plans were also passed for a mission hall by the Christian Brethren in Celt-street and Muirtown-street, at a cost of £1,000.

KILMARNOCK.—HOUSES.—The T.C. has decided to erect 99 houses at Knockinlaw.

MONTROSE.—ALTERATIONS.—The Brechin and Fordoun Presbytery has granted permission for interior alterations to be carried out at the Old Church. The estimated cost of the scheme is £6,000.

MONTROSE.—TOWN HALL.—The Corporation have commissioned Messrs. J. and J. A. Carrick, architects, 25, Wellington-square, Ayr, to prepare plans for proposed Town Hall.

NEWMAINS.—HOUSES.—Plans are to be prepared for 170 houses in Bonkle-road. Mr. Peter C. Smith, Lanarkshire County Housing Architect, Hamilton, prepared the plans.

RENFREW.—WORKSHOP.—The Dean of Guild Court has passed plans for the erection of a workshop by Messrs. Hugh M'Lean and Co., Govan, on ground to the east of the Clyde Trust Buildings.

SALTCOATS. — HOUSING. — The Housing Committee has recommended the T.C. to purchase ground situated at the New England Farm for housing purposes.—The Department of Health for Scotland has approved of a scheme by the T.C. for 162 houses at the corner of Dalry-road and High-road.

ST. ANDREWS.—EXTENSIONS.—The Dean of Guild Court has approved of a £40,000 scheme of extensions to the University at St. Salivalin Residential Hall for male students. Messrs. Miles and Shepherd, South Tay-street, Dundee, are the architects.

STIRLING.—EXTENSIONS.—Mr. Jack A. Coia, of Messrs. Gillespie, Kidd and Coia, Glasgow, has been appointed architect for the extension and completion of Stirling Municipal Buildings.

STRANRAER.—OFFICES.—Plans have been prepared for offices and a garage at Lewis-street and Academy-street, for the Caledonian Omnibus Co., Ltd., Dumfries. The architects are Messrs. James Hay and Steel, 13, West George-street, Kilmarnock.

TRANENT. — HOUSING. — The T.C. has approved a plan for the provision of 24 houses at the New Row Clearance Area.

WISHAW.—CENTRE.—The Scottish Council for Community Service has given to the Wishaw Council authority to proceed with the preparation of a modified scheme for the establishment of a model occupational centre in Wishaw. The Council, with the assistance of Mr. John F. Steel, F.R.I.B.A., architect, are now considering ways and means of modifying the original plan. The proposed site is in Marshall-street, adjoining the Employment Exchange.

SCOTTISH BUILDING LABOUR

A JOINT CONFERENCE.

At a conference in Glasgow on February 18, between representatives of the Scottish National Federation of Building Trades Unions, employers' organisations and the Government Departments, Mr. Leggatt, the chief adviser of the Ministry of Labour, presided and urged the necessity for the augmentation of man power so that there would be no interference with building schemes of any kind. The Government desired an increased output of houses and also wanted industrial and Government buildings to proceed without being held up because of the lack of tradesmen or materials.

Mr. Thomas Barron, the National president, and Councillor Archie McTaggart, the Scottish secretary, made it clear on behalf of the unions that any augmentation must be made through the usual apprenticeship arrangements approved between the unions and the employers. The employers supported this attitude.

The conference was adjourned to allow the employers and unions to hold separate meetings, after which the Ministry of Labour will call the parties together for further consultations.

ELECTRICAL CONTRACTORS ASSOCIATION

AT a recent meeting of the E.C.A. Council a number of applications for membership were considered, and the following contractors were admitted to full membership: W. H. Dixon, 6, Foster-lane, E.C.; A. J. Escott (Escott Bros., Ltd.), 109, Maybank-road, E.18; M. Campbell-Jones (Thorpe and Thorpe, Ltd.), Bush House, Aldwych, W.C.2; V. G. Canham (Bowers and Barr, Ltd.), 24, Regent-street, Great Yarmouth; P. J. Dunbar, 9, Hall-quay, Great Yarmouth; J. W. Lamb, (J. W. Lamb and Sons), 136, Mill-road, Great Yarmouth; N. L. Clarke (Norman Clarke, Ltd.), 137, High-street, Berkhamsted; J. J. Cooksey (J. J. Cooksey and Son), 39, Feltham-road, Ashford, Middlesex; M. G. Cox (Electrical Installations), High-street, Sunningdale; T. H. Lewis (H. Lewis), 107, Chamberlayne-road, N.W.10; W. C. Timpson (Central Electric Co.), Washbrook-road, Rushden; J. E. Trodd, 198, Winchester-road, Southampton; E. Russell, Higher Fore-street, Redruth, Cornwall; D. E. Evans (D. E. Evans and Sons), 54-55, Commercial-street, Ystalyfera; Thomas Jenkins, 10, Gwydr-terrace, Uplands, Swansea; R. F. R. Bew, ("Bews"), 52, Market-place, Burslem; L. Wignall (Staffs Electrical Co.), 6, Longport-road, Longport, Stoke-on-Trent; D. Mounsey, 963, Leeds-road, Thornbury, Bradford; Robert Wild, Crown-street, Cockermouth; L. W. J. Lambert (Winstanley and Lambert, Ltd.), 45-47, Edge-lane, Liverpool, 7; Eric Thompson, the Electric Shop, Thirsk, Yorks; M. E. Broadbent (T. W. Broadbent, Ltd.), Victoria Electrical Works, East-parade, Huddersfield; R. N. Tinniswood, 48, Market-street, Westhoughton.

The following contractors were admitted as associate members: J. Bateman, 41, Chinbrook-road, Grove Park, S.E.12; Fred Standley, Market-place, Wymondham; J. F. S. Small, 4, Chapel-street, Guildford; H. D. Tanner (Southern Electrical Services), 151, Victoria-road, Aldershot; C. W. Sargent (Sargent's Electrical Supply Services), 44-46, High-street, Shoebury-ness; J. Bridger, 71, Woodfield-street, Morriston, near Bridgend; H. Rylance, 1, Maesteg-road, Llangynwyd, near Bridgend; E. M. Thorns, 5, Church-street, Modbury, South Devon; F. S. Boucher (F. S. Boucher and Co.), 312, Deansgate, Manchester, 3; D. Tanner (Schofield and Tanner), 673, Manchester-road, Denton.

Paint as Preservative of Steel.

The Research Association of British Paint, Colour and Varnish Manufacturers have issued a Paint Research Bulletin entitled "The Preservation of Iron and Steel by Means of Paint." Previously, most of the Association's papers have been confidential to the membership of the Research Association, but the Council have now decided to give the widest possible publication to papers dealing with certain classes of subject matter. In this way, since the beginning of 1936, the bi-monthly "Review of Current Literature Relating to the Paint, Colour, Varnish and Allied Industries" has been available to the public at a subscription rate of two guineas per annum. The present paper is the first of a series dealing with specific problems of paint application, and the price has been made low enough for all interested in the use of paint as a protective material, and in the corrosion problem generally, to purchase a copy. The price for single copies is 2s. 6d. (2s. 8d. post free), and inquiries should be addressed direct to the Paint Research Station at Teddington.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Aberdeen.—126 houses on the Powis estate, for the T.C.:—

Mason—
*A. M. Duffus, Aberdeen £11,975
*A. G. Rennie & Son, Brechin 11,663
Carpenter and joiner—
*D. McAndrew & Co., Ltd., Aberdeen 13,759
Slater—
*J. Durnin, Aberdeen 2,467
Plumber—
*W. Burnett, Aberdeen 7,167
Electric light—
*R. A. Mair, Aberdeen 743
Paint and glazing—
*J. Manson, Aberdeen 1,736

Aberdeen.—New medical school at Forresthall, for the University of Aberdeen. Messrs. Pite, Son & Fairweather, architects, 7, Carteret-street, London, S.W.1:—

General contractors—*J. Scott & Son (Aberdeen), Ltd.
Excavation, brick and mason—*Adam Birnie.
Joinery, carpentry and ironmongery—*Clark & Donaldson.
Plumber work and sanitary fixtures—*G. N. Haden & Son, Ltd., Glasgow.
Steel construction—*Bisset & Son, Ltd.
Electrical lifts and installation—*Keighley Electrical Engineering Co., Ltd., London.
Roads construction and paths formation—*J. Leitch.
Painting works and glazing—*Bruce and Mackenzie.
Heating and ventilating installations—*G. N. Haden & Son, Ltd.
Electrical fittings and installation—*Tyler & Prince, London.
(Remainder of Aberdeen.)

Augher.—Elementary school, for the Tyrone and Castlederg E.C.:—
*Callan Bros., Portadown £2,750

Annfield Plain.—Garage, for the Co-op. Society. C.W.S. Architects' Department, 90, Westmorland-road, Newcastle-on-Tyne:—
*T. Howey, Washington.

Ashton-under-Lyne.—Tuberculosis dispensary, etc., in Lees-street, for the Lancashire P.A.C. Mr. Stephen Wilkinson, F.R.I.B.A., County Architect, Preston:—

Builders—*Wellerman Bros., Hyde.
Plumbing—*H. Rigby & Sons, Hyde.
Painting—*Chas. Bell, Manchester.
Plastering—*A. & S. Wallace, Manchester.
Slating—*E. Wild & Sons, Ltd., Ashton-under-Lyne.
Reinforced concrete—*British Reinforced Concrete Co., Ltd., Manchester.
Steelwork—*H. Parkes & Nephew, Ltd., Stockport.
(Estimated cost: £7,500.)

Ayr.—Extensions to the Ayr Academy. Mr. William Reid, architect, Education Offices, Ayr:—

Excavation, brick and mason—
*J. A. Alexander, Galston £8,491
Joinery, carpentry and ironmongery—
*A. Inglis, Kilmarnock 6,497
Glazing work, etc.—
*A. S. Wright & Co., Ltd., Glasgow..... 284
Reinforced concrete—
*J. Barclay & Co., Kilmarnock 6,497
Asphalt works, etc.—
*W. Briggs & Co., Ltd., Dundee 650
Plumber work and sanitary fixtures, etc.—
*W. Shaw, Irvine 4,419
Electrical fittings and installation—
*W. S. Wilson, Ltd., Glasgow 2,500
Painter—
*G. Paton, Irvine 1,102

Barnstaple.—Extension to power station in Castle-street, for the T.C. Messrs. Preece, Cardew & Rider, consulting engineers, 8-10, Queen Anne's-gate, S.W.1:—
*W. Woolaway & Sons, Aviemore, Sticklepath, Barnstaple £9,199

Bedford.—Branch stores at 17-21, Midland-road, for Messrs. Green Shops, Ltd., Tottenham Court-road, W.1. Messrs. John S. Quilter & Son, architects, 3, St. James's-street, S.W.1:—
*Webster & Cannon, Ltd., Aylesbury.

Belfast.—New grain silo at Belfast docks, for Messrs. W. & R. Barnett, Ltd. Mr. R. D. Duncan, F.R.I.B.A., architect:—
*M'Laughlin & Harvey, Ltd. Belfast.

Belfast.—19 shops in Shankill-road :—
*R. & J. Pierce, Ltd., Belfast.

Bexley Heath.—New buildings at the day school for the Kent E.C. Mr. W. H. Robinson, F.R.I.B.A., architect, Springfield, Maidstone :—
*G. E. Wallis & Sons, Ltd., Maidstone.

Birmingham.—Garage, service station and offices of brick and steel construction in Hurst-street, for Messrs. Evans & Kitchen. Messrs. Peacock & Bewlay, FF.R.I.B.A., architects, 83, Colmore-row :—
*J. Bowen & Sons, Ltd., George-street, Balsall Heath, Birmingham.

Birmingham.—Five-story addition to Messrs. Lewis's, Ltd., Bull-street. Mr. Gerald de C. Fraser, F.R.I.B.A., architect, 27, Dale-street, Liverpool :—
*J. Gerrard & Sons, Ltd., Swinton, Manchester.

Birmingham.—Office block, etc., in Temple-street, for Mr. Jack Cotton, 35, Waterloo-street. Messrs. Essex & Goodman, FF.R.I.B.A., architects, 21, Waterloo-street :—
Main contractors—*B. Whitehouse & Son, Ltd., Birmingham.
Steelwork—*E. C. & J. Keay, Ltd., Darlaston.
Reinforced concrete — *Achilles Concrete Construction Co., Ltd., Birmingham.
Portland stone—*South-Western Stone Co., Ltd., London.
Hardwood block floors—*Hollis Bros., London.
Glazing—*G. Greenstone, Woverhampton.
Asphalt—*Limmer & Trinidad Lake Asphalt Co., Ltd., Birmingham.
Granolithic—*Lyne & Sons, Birmingham.
Plumbing—*J. S. Wright & Son, Ltd., Dale End, Birmingham.

Blackpool.—Ice-skating rink and exhibition hall at Pleasure Beach. Mr. Joseph Emberton, F.R.I.B.A., architect, 136, Regent-street, W.1 :—
*Trussed Concrete Steel Co., Ltd., London. (Estimated cost, £75,000.)

Buckhaven and Methil.—74 houses, for the T.C. Mr. P. Sinclair, architect, Kirkcaldy :—

Builder—	
*W. C. Forrester, Leven	£16,168 13 2
Joiner—	
*D. Dewar, Methil	796 18 4
Slater—	
*D. B. Stobie, Buckhaven	4,088 5 10
Plasterer—	
*D. B. Stobie, Buckhaven	2,686 17 6
Electric light—	
*Moncrieff Bros., Leven	546 1 8
Painting—	
*N. Nicholson, Kirkcaldy	717 19 0
Fencing—	
*W. B. Wardlaw, Windygates	908 14 11
Grates—	
*Gray & Pringle, Anstruther	1,006 4 6
Glazier—	
*Melville & Fraser, Kirkcaldy	308 18 1
Metal casements—	
*Crittall Co., Glasgow	953 5 6

Burnley.—64 houses, on the Plane Tree estate, for the T.C. Mr. J. L. Beckett, Borough Surveyor :—
Brickwork, plumbing and painting—
*Direct Works Department, Burnley Corporation £12,495
Joiners—
*J. H. Naylor & Sons 4,368
Slaters—
*H. Nelson, Ltd., Bradford 1,527
Plasterers—
*R. Rawlinson & Sons 1,299
(Remainder of Burnley.)

Bury.—Sub-station at Whitefield-road, for the T.C Borough Engineer, Bank-street :—
*J. Tinline, Ltd., Parker-street, Bury.

Bury.—Convenience in Paradise-street, for the T.C. Borough Engineer, Bank-street :—
*Spencer & Clarke, Ltd., Elton Saw Mills, Bury.

Cardiff.—Exhibition hall, concert hall and sports arena in Wood-street. Mr. Sydney Clough, F.R.I.B.A., architect, 625, Cecil-chambers, 86, Strand, W.C.2 :—
*E. Turner & Sons, Penarth-road, Cardiff.

Chester-le-Street.—49 houses at Urpeth, for the R.D.C. Mr. M. Wilson, surveyor :—
*J. E. Gardner, St. Cuthbert's-road, Gateshead.

Cockermouth.—Three patients' homes, recreation hall, laundry and services, at Dovenby Hall Colony, for the Cumberland, Westmorland and Carlisle Joint Committee for the Mentally Defective. Messrs. J. H. Morton & Son, F.R.I.B.A., architects, 57, Westgate-road, Newcastle-on-Tyne :—
*T. Armstrong, Ltd., Cockermouth ... £43,000

Crook.—Conversion of the boys' school into special subjects rooms, for the Durham County E.C. :—
*Direct Labour £3,740

Dalry.—Junior instruction centre and new public library. Mr. William Reid, architect, County Buildings, Ayr :—
Excavation, brick and mason—
*J. Thomson, Jun., Kilbernie £2,791
Joinery, carpentry and ironmongery—
*Bone & Shields, Irvine 2,444

Darlington.—Gymnasium at the Grammar School, for the T.C. Mr. E. Minors, Borough Engineer :—
*L. C. Abdale, 52, High Northgate, Darlington £4,500

Denton.—External painting of 204 houses on the various housing estates, for the U.D.C. Mr. J. B. Cooke, M.I.M. & Cy.E., surveyor :—
*W. Hopwood, Denton, Manchester.

Derby.—New works in Chandos Pole-street, for the Derby and Midlands Mills (1935), Ltd., Pybus-street :—
*A. Wiener, Ltd., London, N.W.4.

Dudley.—Shop premises in Hall-street. Mr. A. T. Butler, L.R.I.B.A., architect, Priory-street :—
*Hickman & Son, Brierley Hill.

Dudley.—Housing estate fronting Birmingham-Wolverhampton road, for Messrs. Clarke & Son, 12, Horsley Heath, Tipton :—
*W. Whittingham, 57, Victoria-street, Wolverhampton.

Dumbarton.—Aircraft factory in Castle-road, for Messrs. Blackburn & Denny, Ltd. Messrs. James Monro & Son, architects, 307, West George-street, Glasgow :—
Piling—*Franco Compressed Piling Co., Lincoln.
Steel construction — *Redpath, Brown & Co., Ltd., Glasgow.
Special roofing construction — *The Ruberoid Co., Ltd., London.
Glazing—*H. Hope & Sons, Ltd., Smethwick.
Heating engineering and installation—*Ashvale & Nesbit, Ltd., London.

Ealing.—Electrical installation at Coston senior girls' school, for the T.C. :—

Reed & Sons	£807 11 0
Watson & May, Ltd.	780 19 0
T. G. Field	731 10 3
A. C. Baker	727 0 0
S. Goodchild	725 0 0
Rawlings Bros., Ltd.	723 7 0
Honor Bros.	719 10 0
G. Harris	715 14 6
Cox & Hembrow, Ltd.	708 5 0
Page & Girling, Ltd.	694 10 0

Edinburgh.—Church and halls, etc., for the Church of Scotland, in North Shaughlow-road, Carrick Knowe. Mr. Stewart Kaye, architect, 14, Hill-street :—
Excavation, brick and general works — *J. Turner & Sons, Ltd., Edinburgh.

Exeter.—Extensions to departmental stores, Catherine-street and Stephen-street, for Messrs. Bobby & Co., Ltd., drapers. Messrs. J. A. Lucas & Roberts, architects, 27, Dix's Field :—
*Stephens & Son, Bedford-circus, Exeter.

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Flint.—Bus station and service garage at Manor Farm, for the Crosville Motor Service, Ltd. :—
Steel and roof work—*Francis Morton & Co., Ltd., Liverpool.

Gloucester.—Additions to nurses' home, new dining hall and paying patients' block at the Gloucestershire Royal Infirmary, for the Governors. Mr. R. Williams, architect, Royal Infirmary :—
*W. J. B. Halls, Ltd., Burton Gates, Gloucester £12,685

Grantham.—Complete electrical installation of the New Cinema being erected at St. Peter's Hill. Messrs. J. Owen Bond & Son, architects, 26, Tombland, Norwich :—
*Alpha Manufacturing & Electrical Co., Ltd., London, S.W.

Hamilton.—Work at New County Offices, for the C.C. Mr. John Stewart, architect, Albert-street, Motherwell :—
Plaster, lathing and slating—
*Wilson & Hendry, Hamilton £566 18 11
Heating engineering and installation—
*Lanarkshire Works Department, Motherwell 1,546 12 6

Hythe.—Alterations and additions to the Borough Surveyor's offices, "Oaklands," Slade-street, for the T.C. Mr. M. J. Harvey, Borough Surveyor. Quantities by the Borough Surveyor :—

The Seabrook Builders	1,054 0 0
Bailey & Dixon	1,045 0 0
C. Jenner & Sons, Ltd., Folkestone	945 0 0
F. S. Longley & Son (Hythe), Ltd.	920 0 0
C. E. Sprinks & Son	857 10 0
S. J. Sharp & Son	836 0 0
†W. Bidnell & Son, 28, St. Leonard's-road	813 16 0

(Remainder of Hythe.)

Ilminster.—16 houses at Winterhay, for the U.D.C. Mr. G. K. Foster, surveyor, North-street :—
†W. R. Rist, Curry Rivel £7,093

Ireland.—Contracts placed by the Commissioners of Public Works :—
Killenduff National School, Co. Sligo — improvements—
*John Rowland, Ballycastle.
Crummy National School, Co. Leitrim — improvements—
*Francis J. McAvinia, Ballinamore.
Killenure National School, Leix — erection of new school—
*T. J. Kenny, Nenagh.
Magherarourty National School, Co. Donegal—erection of new school—
*Hugh Coyle, Lifford.
Ballintubber Garda Station — erection of new station—
*Michael Dolan, Castlerea.
Ardagh National School—erection of new school—
*McGoff Bros., Ballina.
Kilworth Camp, Co. Cork—erection of a drill hall—
*J. J. Healy, Cobh.

Kilmarnock.—99 houses and other works at Knocklaw. Messrs. James Hay & Steele, architects, Prudential Assurance-buildings :—
Excavation, brick and mason—*W. Pollock & Son, Kilmarnock.

Kirkcaldy.—200 houses at Hayfield housing site, for the T.C. :—

Mason and brickwork—	
*W. A. Arnot M'Leod, Ltd., Edinburgh	£35,901 0 0
Joiner—	
*A. Smith, Thornton	30,045 19 5
Plumber—	
*J. Black, Kirkcaldy	12,327 14 7
Plaster—	
*J. R. & A. Adam, Lochgelly	7,049 0 0
Roof work and roughcast—	
*J. Robertson & Sons, Dunfermline	8,033 0 0
Glazier—	
*Melville & Fraser, Kirkcaldy	657 0 0
Electric light—	
*Moncrieff Bros., Ltd., Leven	1,605 0 0
Fencing—	
*A. Mowat, Windygates	981 0 0
Painter—	
*N. Nicholson, Kirkcaldy	1,639 10 3

Leeds.—External painting to houses on various estates, for the Corporation. Mr. R. A. H. Livett, Director of Housing :—
1,551 houses and flats on the York-road and Torre-road estates—
*T. H. Rusling, Ltd., Hull £3,469
501 houses at Wyther and 88 at Westfield—
*L. Kendal, Leeds ..... £1,141 and £245
585 houses at Potternewton and Meanwood—
*H. Cranston, Leeds £1,433
545 houses at Dewsbury-road—
*W. Palmer, Ltd., Leeds £1,246
619 houses at Torre and Ivy House estates—
*H. R. Stott, Leeds £1,374

¶London.—Tenders accepted by H.M.O.W., for the week ended February 18 :—

Ladder back chairs—Thomas Glenister, Ltd., Temple Works, High Wycombe.

Bronze counter screen—Tonks (Birmingham), Ltd., 201, Moseley-street, Birmingham.

Overhead door springs—J. Beresford & Son, Ltd., Cato-street Works, Birmingham.

Grouped flags—J. Edgington & Co., Sardinia House, Sardinia-street, Kingsway, W.C.2.

Solid top tables—Smith's Systems, Ltd., St. Marks, Cheltenham.

Chamois leathers—J. S. Deed & Sons, 91, New Oxford-street, W.C.1.

W.I. kettles—Joseph & Jesse, Siddons, Ltd., West Bromwich.

Clocks—F. W. Elliott, Ltd., Union-road, W. Croydon.

Tower of London—excavation and carting work—Coles Demolition & Excavation, Ltd., 174, Twickenham-road, Isleworth.

Manchester Employment Exchange — foundation work—J. Gerrard & Sons, Swinton, Manchester.

Bookcases—Wake & Dean, Ltd., Yatton, near Bristol, and A. G. Farmer & Sons, Ltd., Winterstoke-road, Bedminster, Bristol.

Shepherd's Bush sub-district office—alterations and additions—Killby & Gayford, Ltd., 87, Worship-street, E.C.2.

Police buildings in Hyde Park—erection, and Aldwych B.P.O.—alterations—Higgs & Hill, Ltd., 14, Godliman-street, E.C.4.

¶London.—List of new works contracts placed by H.M. Air Ministry for the week ended February 20 :—

Finishings to hutted camps—South Cerney—Downing, Rudman & Bent, Chippenham; Brize Norton, Oxford—C. E. Lamburn, Dry Sandford; Honington—F. Hossack & Son, Sleaford; Cottesmore—L. J. Owen, Nottingham; Linton—L. J. Owen, Nottingham; Debden—F. Hossack & Son, Sleaford.

Heating and hot-water supply at Woodsford—G. N. Haden & Sons, Ltd., London, W.C.2.

Erection of buildings at St. Mary's, Scilly Isles—J. F. Ellis, Porth Cressa, St. Mary's, Scilly Isles.

Heating and hot-water supply at Palace of Engineering, Wembley—G. N. Haden & Sons, Ltd., London, W.C.2.

Clothing of sheds and erection of annexes at Pembroke Dock, Carmarthen—Ashford Builders Co., Ltd., London, W.C.1.

Heating and hot-water supply at Ternhill and Shawbury—Arthur Scull & Son, Ltd., Bristol.

Additions to hutted camp at Yeadon—Gerrard & Sons, Ltd., Manchester.

District heating at Stradishall—Sulzer Bros. (London), Ltd., London, W.C.1.

Underground and overhead distribution and internal wiring of hutments at Cottesmore—B. French & Co., Ltd., London, W.C.2.

Same as above at Linton—Overhead, Ltd., London, S.W.1.

¶London.—Tenders accepted by H.M. Civil Engineer-in-Chief's Department, Admiralty :—

Fishguard—borings—Andrew Kyle, Ltd., Airyknowe, Galston, Ayr.

Prawle Point—reconstructing road—W. G. Northcott & Co., Ltd., Beacon View, Whipton, Exeter.

London.—Works, for the Westminster City Council :—

Electrical installation at the central depôt—

Higgins & Cattle	£7,943 7 0
F. H. Wheeler	6,887 18 11
Francis Polden, Ltd.	6,549 6 4
‡Pinching & Walton, Ltd.	6,316 18 11
Reduced to ...	5,184 19 11

Stand of steel scaffolding and timber at Hyde Park Corner :—

	Roofed.	*Unroofed.*
Holloway Bros. (London), Ltd.	£1,498 0	£1,233 0
John Mowlem & Co., Ltd.	1,386 0	1,146 0
Sims & Russell	1,054 0	879 0
F. Cope & Co., Ltd.	997 10	828 10
Steel Scaffolding Co., Ltd.	‡513 0	413 0

Reconstruction of the interior of the Leicester-square men's convenience—

*Sims & Russell £3,442

London.—Demolition work in the King and Queen-street area, Walworth, for the L.C.C. :—

*London Demolition Co., Ltd., Isleworth.

London.—Extensions in North Circular-road, Palmers Green, for the Metal Box Co., Ltd., 28, Kingsway, W.C.2. Mr. S. N. Cooke, F.R.I.B.A., architect, Sun-buildings, Bennett's Hill, Birmingham. Quantities by Mr. E. C. Wakeham, Lombard House, Great Charles-street, Birmingham :—

Builders—*F. & H. F. Higgs, Ltd., London, S.W.

Demolition work—*London Demolition Co., Ltd., Isleworth.

London.—Demolition works, for the Finsbury B.C. :—

At Vineyard Gardens site—

‡Road Foundation Co., Ltd.	£706 17 6

At Church-row and Helmet-row—

‡F. A. Long	275 0 0

Long Benton.—44 houses, for the U.D.C. Mr. W. Bean, architect :—

*E. Matthews, 32, North Seaton-road, Newbiggin £14,456

Macclesfield.—Nurses' home, cubicle block, ward block and disinfectant station, laundry and mortuary, at the Isolation Hospital, Moss-lane, for the T.C. Mr. E. Hamson, Borough Surveyor :—

*G. Roylance & Co., Macclefield..... £15,959

(Subject to approval of M.H.)

Manchester.—Warehouse and re-roofing of existing building in Bradshaw-street and Dantzic-street, Shudehill, for Messrs. J. H. Vickery & Co., Ltd., 21, Brayshaw-street, Shudehill. Mr. J. E. Kewell, architect, 290, Oxford-road, Chorlton-on-Medlock :—

*S. W. Saunders, Salford 6.

Manchester.—Extensions to the nurses' home at the Manchester Victoria Memorial Jewish Hospital, for the Board of Management. Mr. Harold Davies, architect, 543, Abbey House, Victoria-street, Westminster, London :—

*Moseley Construction Co., Ltd., Manchester.

(Estimated cost £5,000.)

Middlesbrough.—Greenhouse, potting shed and store, and messroom at the Sandy Flat Cemetery, for the T.C. :—

Greenhouse, potting shed and store—

*J. S. Earnshaw, Ltd., Stockton-on-Tees £427 13 5

Messroom—

*J. S. Earnshaw, Ltd. 159 8 10

Newcastle-on-Tyne.—Shops and offices in Sutton-street, for the Model Milk Co. Mr. W. Riddle, architect, 53, Denham-terrace, Wallsend :—

*J. J. Hedley, Crawhall-road, Newcastle.

Newton Abbot.—New premises in Queen-street, for the Newton Abbot and District Co-operative Society, Ltd. Mr. L. G. Ekins, F.R.I.B.A., architect, 99, Leman-street, E.1 :—

*P. W. Wilkins & Son, Brunswick-square, Torquay.

Offaly.—Schools, for the Vocational E.C. :—

School at Ferbane—	
T. O'Reilly & Sons, Kill	£3,876
Hodgins & Waters, Dublin	3,125
Patrick Hogan, Banagher	2,917
M. Flynn, Oldcastle	2,780
*J. Kenny & Sons, Banagher	2,578
School at Shinrone—	
O'Reilly & Sons	3,147
P. Hoctor, Shinrone	2,817
T. Fogarty, Roscrea	2,565
M. Flynn, Oldcastle	2,500
Hodgins & Waters	2,479
—. Kenny, Banagher	1,996
*Gunning Bros., Birr	1,794

Oldham.—Rebuilding the "Albion Hotel," High-street, for the Oldham Brewery Co., Ltd., Coldhurst-street Brewery. Messrs. C. T. Taylor, Roberts & Bowman, L.R.I.B.A., architects, 10, Clegg-street :—

*Whitworth Whittaker & Sons, Ltd., Oldham.

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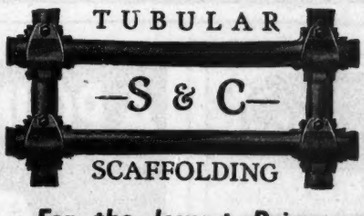

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Portsmouth.—Pump house and rising main at Eastney pumping station, for the T.C. City Engineer :—

*Direct Labour.

Rotherham.—Works in Grange Mill-lane, for the British Atcheson Electrodes, Ltd., 87, Fargate, Sheffield :—

*G. Longden & Son, Ltd., Sheffield, 3.

Sealand, near Chester.—116 houses, with roads and sewers, for the Welsh Land Settlement Society, Ltd. Mr. T. Alwyn Lloyd, F.R.I.B.A., P.-P.T.P.I., architect, 6, Cathedral-road, Cardiff :—

	Houses.	Roads & Sewers.
Jones & Roberts Hawarden...	£60,314	£16,361
E. Rich & Sons, Swansea.....	54,700	17,005
J. Gerrard & Sons, Ltd., Manchester	46,920	11,750
T. Warrington & Sons, Ltd., Ellesmere Port	46,708	†7,196
Vickery Bros., Barry	44,606	8,290
G. H. Heywood, Ltd., Whitby ...	49,067	——
Alun Edwards, Ltd., Cefny Bedd	41,872	9,420
Francis Roberts & Sons, Ltd., Wrexham	†40,960	9,302
Aaron Jones, Northop Hall Village	——	9,337

Skelton and Brotton.—53 houses on the housing site in Station-lane, Skelton, for the U.D.C. Mr. Arthur R. Cranmer, surveyor :—

*Ball, Thomas & Lister, Stockton-on-Tees £2,359 5

Spenborough.—64 houses on the Laverhills site, Hightown, Liversedge, for the U.D.C. Mr. A. Rothera, architect, Church-street, Cleckheaton :—

Mason and bricklayer—*Robinson & Crowther, Cleckheaton.

*Tom Drake, Littletown, Liversedge.

Boundary wall—*Tom Drake, Littletown, Liversedge.

Carpenter and joiner—*S. Armitage & Sons, Ltd., Dewsbury.

*Wortley & Boothroyd, Ravensthorpe.

Plumber and glazier—*S. T. Sharp, Cleckheaton.

*F. Robinson, Buttershaw.

Water main—*F. Robinson, Buttershaw.

Slater—*F. P. Leach & Sons, Ltd., Bradford.

Plasterer—*Nelson Parkinson, Cleckheaton.

Painter—*H. Greaves, Liversedge.

Plasterer—*A. Idle & Son, Gomersal.

Electrician—*F. W. Birkett & Sons, Ltd., Cleckheaton.

Main sewer and street works—*F. P. Leach & Sons, Ltd., Bradford.

Spilsby.—Extensions to the Grammar School, for the Lindsey E.C. Mr. P. W. Birkett, A.R.I.B.A., County Architect, Lincoln :—

*R. M. Phillips & Son, Ltd., Brigg £14,279 19 9

(Subject to approval of B. of E.)

Sunderland.—Conversion of Nos. 1 and 2, St. George's-square into a domestic subjects centre and gymnasium, for the E.C. Mr. O. H. Mark, Education Architect :—

*Direct Labour (cost, £5,000).

Teddington.—Public convenience in Ferry-road, for the U.D.C. Surveyor :—

J. A. Dumayne & Co., Ltd., London	£919 0 0
W. H. Gaze & Sons, Ltd., Kingston	817 0 0
Lees of Enfield, Ltd., Enfield	779 0 0
Speechley & Smith, Richmond	762 0 0
W. & F. Doughty, Teddington	715 0 0
Ides, Ltd., Kingston	697 0 0
Barvis Partners, Ltd., Romford	695 0 0
Sloggetts, Ltd., Hampton Hill	679 0 0
A. Oakes & Co., Teddington	675 0 0
Hodgson Bros., Ltd., Surbiton	616 12 4
*A. Limpus & Son, Ltd., 67, Victoria-road, Surbiton	576 0 0

Todmorden.—Erection of the Abraham Ormerod Clinic and Health Centre, for the Trustees. Mr. J. E. Stott, architect, 3, Bridge-street :—

Builders—*J. M. Firth & Sons.

Carpenters and joiners—*Halstead Bros.

Plumber and glazier—*A. Woodhead.

Slating and plastering—*T. Sutcliffe & Sons.

(All of Todmorden.)

(Estimated cost, £4,500.)

Truro.—Extensions to the Royal Cornwall Infirmary, for the Governors. Mr. Alfred J. Cornelius, F.R.I.B.A., architect. Quantities by Messrs. S. W. Haughton & Sons, Plymouth :—

Wm. Trathen, Redruth	£54,664 0 0
Wakeham Bros., Ltd., Plymouth	53,972 0 0
F. C. West, Ltd., Newquay	53,488 0 0
Pearne Bros., Ltd., Plymouth	52,599 0 0
E. Thomas, Falmouth	52,430 0 0
A. N. Coles (Contractors), Ltd., Plymouth	49,930 0 0
*John Williams & Co. (Cornwall), Ltd., South St. Austell	49,082 8 2

Walsall.—Branch bank in Lower Bridge-street, for Messrs. Martin's Bank, Ltd., Water-street, Liverpool, 2. Mr. E. C. Aldridge, L.R.I.B.A., architect, 14, Castle-street, Liverpool:—

*H. J. Amies & Sons, Ltd., Wolverhampton.

Wallsend.—Extensions to the offices of Messrs. Swan, Hunter & Wigham Richardson:—

*Purdy & Lumsden, 25, Orchid-street, Newcastle.

Waltham Holy Cross.—10 houses, together with construction of a short length of road and sewer, on the Pynest Green housing site, for the U.D.C. Mr. S. W. C. Holloway, engineer and surveyor:—

Crook Bros., Ware	6,512 7 2
—. Pearce, Whetstone	£6,892 10 0
H. C. Leach, Waltham Cross	6,291 0 0
City Construction Co., Edmonton	6,178 3 0
G. P. Walker & Sons, Enfield Wash	5,192 8 0
E. S. Moss, Ltd., Hendon	5,185 12 6
‡H. A. Cornish, Waltham Cross	4,736 11 0

Warminster. — Electrical installation at the Camp:—

*Alpha Manufacturing & Electrical Co., Ltd., London, S.W.

West Hartlepool.—94 houses and 38 bungalows on the Milbank estate, for the T.C.:—

*C. M. Yuill, 20, Elwick-road, West Hartlepool.

Wolverhampton.—Rebuilding hotel premises in Broad-street, for Messrs. Banks, Ltd. Mr. Bertram Butler, F.R.I.B.A., architect, 14, Waterloo-road, Wolverhampton:—

*Hy. Willcock & Co., Ltd., Darlington-street, Wolverhampton.

Wolverhampton. — Rebuilding the "Fighting Cocks" at Goldthorn Hill, for Messrs. Banks, Ltd., brewers, of Wolverhampton. Mr. A. T. Butler, L.R.I.B.A., architect, Priory-street, Dudley:—

*Dallow & Sons, Blackheath.

COMPANY NEWS

Temperance Permanent Building Society.

The annual meeting of this society was held on February 17, when the Directors' Report for the year ended 31st December, 1936, was submitted with the statement of accounts, and duly adopted. The report shows that the amount at credit in the share department is £2,823,163 18s. 3d.; the amount at credit in the deposit department, £1,995,240 17s. 9d.—an increase of £544,616 0s. 6d. In the mortgage department the sum of £1,284,408 9s. 4d. was advanced to purchasers of house property mainly for the occupation of the borrowers. This amount was £176,189 2s. 11d. more than that advanced in the preceding year, bringing the total mortgage assets to £5,518,909 0s. 8d. — an increase of £552,682 17s. 3d. The total assets are now £5,707,477 16s. 3d.—an increase of £497,279 13s. 5d.

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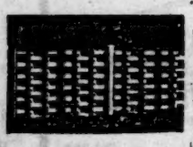
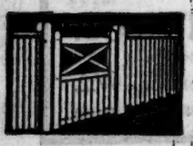

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